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Joint
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Exploring New Concepts for Joint Urban Operations

Alec Wahlman

Col Mark Bean, USMC

Col Gary Anderson, USMC (Ret.), and
The Defense Adaptive Red Team

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Karl H. Lowe, Director – Joint Advanced Warfighting Program

7 April 2004

Events of the past two years, particularly those currently underway in Iraq, have brought renewed and overdue attention to the improvement of urban warfare capabilities and concepts. In the past, armies struggled against their opponents by either pounding the city to rubble (Grozny), isolating and starving inhabitants and defenders alike (Leningrad), or attacking frontally to evict the enemy street-by-street and house-by-house (Aachen). Today's greater ability to employ precise firepower against points of importance, coupled with improved intelligence, surveillance, and reconnaissance means, makes past approaches to taking a city obsolete. It has become possible to reduce friendly and civilian casualties and collateral damage to the infrastructure necessary to restoring normalcy when the fighting ends.

This paper describes a series of four tabletop war games that explored alternative methods of taking a city. The experiments were conducted by the Joint Advanced Warfighting Program in collaboration with the Defense Adaptive Red Team. Using an earlier JAWP paper, *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations*, participants in the war games explored six operational concepts and the capabilities needed to make these concepts more feasible. While no "silver bullets" or singularly compelling concepts emerged, the deliberations of the participants illuminated approaches that could help make future urban warfare less bloody and destructive, a challenge faced daily by coalition forces in Iraq.

Joint operational concepts will be most useful if they stimulate discourse—that is, constantly evolving rather than remaining static pronouncements. To that end, I invite your comments and feedback, which should be directed to one of the authors of the paper:

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Karl H. Lowe

Preface

This paper was prepared under the task order Joint Advanced Warfighting Program (JAWP) for the Director, Defense Research and Engineering in the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. It helps address the task order objective of producing breakthrough joint operational concepts.

JAWP was established at IDA by the Office of the Secretary of Defense and the Joint Staff to serve as a catalyst for stimulating innovation and breakthrough change. The JAWP Team is composed of military personnel on joint assignments from each Service and civilian research analysts from IDA. JAWP is located in Alexandria, Virginia, but includes an office in Norfolk, Virginia, that facilitates coordination with the United States Joint Forces Command.

Maj Christopher A. Arantz, USMC, of the Joint Advanced Warfighting Program (JAWP) at the Institute for Defense Analyses (IDA) took the lead in developing the brief contained in Appendix A of this paper. He was assisted by the following JAWP staff members: Col Mark Bean, USMC; CDR Michael Pease, USN; LTC Kevin Woods, USA; Maj Jenns Robertson, USAF; and GySgt Frederick Rott, USMC.

In preparation for the war games, Col Mark Bean, USMC, prepared more extensive descriptions of the original five operational concepts found in the IDA paper *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations*. These descriptions are found in Appendix B of this paper, with some minor changes in structure, along with a detailed description of the new and sixth concept *Nodal Capture*. (*Nodal Capture* was added as a variant of the *Nodal Capture and Expansion* concept.)

Mr. Jeffery M. Jaworski, JAWP–IDA, contributed to this report, participated in several of the games, and also assisted in the preparation of briefings. The

Defense Adaptive Red Team (DART)[1] participants were Col Gary Anderson, USMC (Ret.); CAPT John Sandoz, USN (Ret.); and Mr. Mark Mateski.

Other participants were from IDA, US Joint Forces Command (JFCOM), the Services, and Department of Defense organizations. We would like to express our appreciation to the following:

Mr. Mike Collins, Arlington County Department of Public Works
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Mr. Jim Lasswell, US Marine Corps Warfighting Laboratory
Mr. Drew Lewis, JAWP–IDA
Mr. Jack Sawicki, Arlington Emergency Medical Services Council
Mr. Jim Yeager, DART
MG Larry D. Budge, USA (Ret.), JAWP–IDA
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COL Michael Barron, USA, JAWP–IDA
Lt Col William E. Schaal, USAF, JAWP–IDA
Lt Col Jeff Cohen, USAF, JAWP–IDA
LTC Charlotte Hallengren, USA, JAWP–IDA
Maj Scott Sauer, USMC, US Marine Corps Warfighting Laboratory
LCDR Michael Sheehan, USN, JAWP–IDA

This paper does not necessarily reflect the views of IDA or the sponsors of JAWP. Our intent is to stimulate ideas, discussion, and, ultimately, the discovery and innovation that must fuel successful transformation.

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[1] DART is part of Hicks and Associates, Science Applications International Corporation.

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Background

During the first half of 2003, the Joint Advanced Warfighting Program (JAWP) conducted a series of tabletop war games on urban operations concepts. These games explored six new operational concepts identified in a JAWP document, *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations* (hereafter referred to as the *DoD Urban Roadmap*).[2]

The goal was to better understand the utility, strengths, and weaknesses of each concept and to learn more about their interrelation. The approach involved giving Blue Teams varying degrees of freedom to apply the concepts within urban scenarios, while Red Teams countered with their own courses of action. Both Blue and Red players gave feedback during play regarding capability needs.

The scenario featured offensive operations against Baghdad. Baghdad was selected for both its currency and the wealth of open source information available on the city and the forces likely to defend it. Blue had more than four divisions against a Red force of three divisions. The scenario stipulated that Blue had already taken control of most of the territory outside of the capital. Blue players were briefed on the city's infrastructure nodes and demographic configuration. The capabilities of the Red force, a mixed heavy and light force, were also briefed to Blue. Blue's ISR (intelligence, surveillance, reconnaissance) assets were able to locate about 50% of the Red defenses.

The results should be of use to those developing training, planning, and experimentation on urban operations. Though limited in detail, Blue Team plans illuminate the potential utility of the various concepts or their combinations across several scenarios. Investigators of technological solutions for

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[2] William J. Hurley, Alec Wahlman, COL Thomas Sward, USMC, Duane Schattle, and Joel B. Resnick, IDA Paper P-3643, two volumes, Institute for Defense Analyses, Alexandria, VA, March 2002, For Official Use Only.

urban operations challenges should also find value in the capability-demand patterns of the Blue players, and what Red players thought Blue needed.

Six Operational Concepts

Compared to historical urban concepts of *siege*, *frontal assault*, and *rubblization*, the new operational concepts rely heavily on *understanding* and *shaping* the urban battlespace. (See **Figure ES-1** below.) All six also require isolating the city from outside sources of supply and reinforcement. The six also require integration of continuous ISR efforts with fire delivery and ground maneuver, whether by special operations forces, or by conventional ground forces, or their combination.

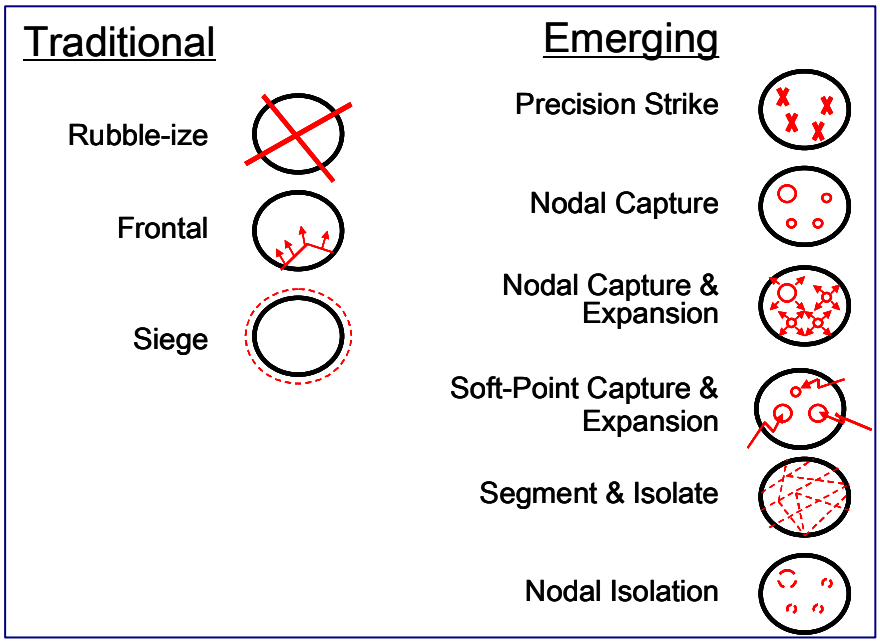

Figure S-1. Six Operational Concepts

Precision Strike is an approach that uses precision attacks (remotely delivered strike operations, special operations direct action, and ground force attack by fire) to destroy, fix, and suppress detected adversary capabilities from stand-off distances and isolate him from outside sources of supply and reinforcement without occupying ground. It requires precisely knowing the locations and nodes of adversary forces and how they interact. The joint force commander minimizes ground force presence by employing remotely delivered fires and special operations direct action as his primary defeat mechanisms.

Nodal Capture is an approach that leverages control of critical (structural and non-structural) nodes in the city to order to deny the adversary sources of support and freedom of movement, and to prevent contact between adversary forces. This approach exploits the psychologically debilitating effects produced when forces are separated from their accustomed sources of strength. It requires knowing which nodes are critical, how they interact, and a thorough understanding of the adversary's defensive plan. Once key nodes are identified, the JTF conducts operations to rapidly capture them and subsequently support the occupying ground forces.

Nodal Capture and Expansion is an approach that leverages control of critical nodes in the city to facilitate the capture of the rest of the city. It requires knowing which nodes are critical and how they interact. Once key nodes are identified, the joint task force conducts operations to rapidly capture them and then expand out from these bridgeheads, either one-by-one or simultaneously, to destroy a weakened adversary.

Soft-Point Capture and Expansion is an approach that captures undefended areas in the city and uses them as bridgeheads for decisive, multiple attacks. It requires knowing where adversary forces are, where they are not, and how they plan to defend the city. This approach exploits non-contiguous operations and rapid maneuver to disrupt the cohesion of adversary forces and the plans of their commanders. These multi-directional attacks make movement, intelligence, logistics, command and control, and force protection difficult for the enemy.

Segment and Capture is an approach that employs counter-mobility to fix the adversary forces so they lose the ability to mass for either defensive or offensive purposes and can be defeated piecemeal. Segmenting the city also severely disrupts adversary logistical operations. Central caches of arms and supplies, or critical nodes of the city's infrastructure, can no longer support units in other parts of the city. In those sections of the city not containing adversary forces, efforts at reestablishing the indigenous support infrastructure or bringing in outside support can begin early.

Nodal Isolation is an approach that (physically and psychologically) seals critical (structural and non-structural) nodes from an adversary to deny him sources of support and freedom of movement, and to prevent contact between adversary forces. This approach exploits the psychologically debilitating effects produced when forces are separated from their accustomed

sources of strength. It requires knowing which nodes are critical and how they interact. The joint force commander seeks to minimize ground force presence by isolating nodes largely through the use of counter-mobility assets and remote fires.

Tabletop War Games

The first three games were structured similarly.

- Each had Blue and Red Teams.
- Each had the same scenario, involving a Red force defending Baghdad. Blue's mission was to "eliminate remaining Red government and military resistance, to control the city and associated national infrastructure, to reduce civilian suffering, and to facilitate transition to stability and support operations."[3]
- In each game, Blue Teams were asked to develop courses of action that applied to one or more of the six operational concepts from the *DoD Urban Roadmap*.
  - War Game I: Blue Teams were assigned an operational concept.
  - War Game II: Blue Teams were allowed to pick one concept as their primary *modus operandi,* but could also complement it with the other concepts.
  - War Game III: Blue Teams were assigned the same operational concept.

  (The variation in each game related to how much freedom the Blue Team was given in drawing on the operational concepts.)

The fourth war game used a homeland scenario (Arlington, Virginia) with Blue seeking to restore control of the city from a terrorist force. This scenario directed the players to explore the use of the *Nodal Isolation* concept.

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[3] Appendix B of this document.

The participants in the war games represented a broad range of expertise and experience:

- Civilian research analysts from the Institute for Defense Analyses and military personnel from all four Services assigned to JAWP.
- The United States Joint Forces Command (USJFCOM).
- The Marine Corps Warfighting Lab.
- The Defense Adaptive Red Team (DART) from Science Applications International Corporation.
- The Arlington County (Virginia) Police, Fire, and Utilities Departments.

Insights from the War Games

Insight No. 1. The six operational concepts should not be viewed as "stand alone."

In the *DoD Urban Roadmap*, the new operational concepts were written as separate approaches but it was acknowledged that these concepts could be used in combination and in overlapping timeframes.

The degree to which mixing of concepts occurred in the war games surprised the authors of the *Roadmap*.[4] Although several war games were structured to force participants to choose a particular concept, participants tended to mix and match aspects of several concepts. (A single approach did not allow enough flexibility to account for variations in terrain, the enemy situation, and the clarity of available intelligence. Future experimentation should focus on how a future joint force commander could best make use of combinations of these concepts.)

Insight No. 2. There were patterns to the capabilities required by Blue.

While Blue plans varied regarding the emphasis and sequence in which they employed various capabilities, the plans tended to draw on the same general

[4] Most of whom participated in the war games.

palette of capabilities. The most prominent capabilities are listed below, along with specific characteristics called for by Blue players.

- **Urban ISR.** Sensors and sensor platforms that can detect Red wherever he is (e.g., underground, indoors). The sensors and their platforms could be either survivable or expendable (i.e., unmanned, cheap, and plentiful), and have persistent coverage. They would also help identify how urban infrastructure networks interact within the city and with networks outside the city.
- **Electronic Warfare/Information Operations.** To control the electronic battlespace, to interfere with Red command and control (C2), to influence Red and the civilian population, and to control or disable the civilian infrastructure without doing long-term damage.
- **Precision strike.** Generate low collateral damage, using precision munitions, controllable down to the small-unit level, both kinetic and non-kinetic. This capability should be able to "turn off" temporarily various pieces of the urban infrastructure rather than destroy it.
- **Non-lethal weapons (NLWs).** To separate Red forces from civilians, to force Red forces out of hiding, and to reduce civilian casualties. This capability must also be fully integrated as a part of combined arms.
- **Urban logistics.** Re-supply isolated forces without endangering Blue personnel.
- **Support for the civilian population.** Provide food, water, medical, shelter, and consequence management.
- **Coordination and cooperation across Service, agency, national, and non-governmental organization (NGO) lines.** So many players have roles in an urban environment that deconfliction and coordination are needed. This capability entails a better understanding of each element's capabilities, the goals and motives of each player, and the potential synergies.

Insight No. 3. A blend of the new operational concepts appears to offer advantages over traditional urban operational concepts.

Some of the advantages cited by participants included reductions in the following: Blue casualties, Blue force size, civilian casualties, collateral damage, time to defeat Red.

Applications of these concepts were limited by today's capabilities, and they did not do well individually. But collectively they showed greater promise.

The insights point the way ahead for further experimentation. Despite the need for blending the various concepts, discrete investigation of individual *DoD Urban Roadmap* concepts appears to offer little value. Conversely, additional study is warranted into why players tended to demand a similar palette of capabilities across all of the war games. Such a study could focus on such questions as the following:

- Why were particular capabilities popular with Blue?
- How close is DoD today to providing needed capabilities?
- What changes in organization might improve urban operations capabilities?
- Are current deficiencies a product of training and/or training facilities?
- Do the needed technologies already exist on the shelf? If research and development is required, how long would the technology take to mature?

The *DoD Urban Roadmap* organizes urban operations capabilities by the function they support: Understand, Shape, Engage, Consolidate, and Transition (USECT). For the complete list of the 31 capabilities listed in the *DoD Urban Roadmap*, see Annex 1 (page 35). Each capability was also assigned a grade in the *Roadmap,* based on how close DoD is meeting identified needs today.[5]

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[5] See Volume II of the *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations*, pp. III-1 to III-3 and B-3 to B-37.

Exploring New Concepts for Joint Urban Operations

1. Introduction

In response to requests by its sponsors, the Joint Advanced Warfighting Program has been studying urban operations since 1999. The centerpiece of this effort has been so far the two-volume *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations* (referred to hereafter as the *DoD Urban Roadmap*).[6] An important part of the *DoD Urban Roadmap* was the presentation of six operational concepts for urban operations.

- *Precision Strike* uses precision attacks (remotely delivered strike operations, special operations direct action, and ground force attack by fire) to destroy, fix, and suppress a large percentage of the adversary's capabilities from standoff distances and isolate him from outside sources of supply and reinforcement without occupying ground.
- *Nodal Isolation* seals (physically and psychologically) critical nodes (structural and non-structural) from an adversary to deny him sources of support and freedom of movement, and to prevent contact between adversary forces.
- *Nodal Capture* leverages control of critical (structural and non-structural) nodes in the city to deny the adversary sources of support and freedom of movement, and to prevent contact between adversary forces.
- *Nodal Capture and Expansion* leverages control of critical nodes in the city to facilitate the capture of the rest of the city.
- *Soft-Point Capture and Expansion* captures undefended areas in the city and then uses them as bridgeheads for decisive, multiple attacks.

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[6] William J. Hurley, Alec Wahlman; COL Thomas Sward, USMC; Duane Schattle; and Joel B. Resnick, IDA Paper P-3643, Institute for Defense Analyses, Alexandria, VA, March 2002, For Official Use Only.

- *Segment and Capture* employs counter-mobility to fix enemy forces so they lose the ability to mass for either defensive or offensive purposes and can be defeated piecemeal.

These concepts were new in the sense they are refinements of blunt force methods used in most previous urban operations. The intent of these concepts is to apply in urban areas the advantages[7] US forces enjoy in open terrain. The *DoD Urban Roadmap* also addresses the capabilities needed for these concepts and the degree to which today's force meets urban needs.

This paper describes a series of war games conducted in the first half of 2003 that explored these six "new" urban operational concepts. The goal was to better understand the utility, strengths, and weaknesses of each concept, and to learn more about their interrelation. The approach involved giving Blue players varying degrees of freedom to apply the concepts, while Red Teams countered with their own adaptive courses of action. Many of the Blue and Red players brought with them years of experience studying urban warfare.

The results of the experiments can be of use to developers of plans, training, and experimentation for urban operations. Though the plans developed by the various Blue Teams were limited in detail, they do crystallize the perspectives of participants on how useful the various concepts might be. Investigators of technological solutions for urban operations should also find value in the capability-demand perspectives of the Blue players, and also what Red players thought Blue needed.

Organization of This Document

The war games are described in the order they occurred, with a chapter devoted to each one (Chapters II through V). The description of each game includes its scenario, concept of options for Blue, Blue-Red force mix, the actions of Blue and Red, and the results.

Following the chapters on the war games is an annex that describes the USECT Scheme (Understand, Shape, Engage, Consolidate, and Transition) with 31 capabilities tracked to one or more elements of USECT.

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[7] For example, maneuver; mobility; precision strike; standoff engagement; intelligence, surveillance, and reconnaissance (ISR); and survivability

References and a list of acronyms and abbreviations are provided. Appendices A through H provide supporting data in more detail.

- Appendix A contains the background briefing given to all players in War Games II and III.
- Appendix B includes the detailed descriptions of the six operational concepts for Blue player use.
- Appendixes C, D, and E contain outbriefs by different Blue Teams from various war games.
- Appendix F contains a Red Team briefing of insights given at the end of War Game II.
- Appendix G contains a Red Team briefing that evaluates the concepts.
- Appendix H contains the notes from a Blue Team in War Game II.

2. War Game I

2.1 Introduction

War Game I was a training event for the war games that followed. The goal was to familiarize participants with urban combat issues, the new operational concepts described in the *DoD Urban Roadmap*, and the process that would be used to conduct subsequent war games.

The game began with briefings to the participants on an urban scenario, and the six operational concepts from the *DoD Urban Roadmap*.[8] Three Blue Teams were created, with each one assigned an operational concept to apply to a scenario that featured offensive operations against Baghdad.[9]

The three teams then spent the day developing a plan for applying their chosen operational concept. The following day each Blue Team briefed its plan, and Red responded to each in turn with its own course of action.[10]

2.2 Results

From the outbriefs presented it was apparent that all the Blue Teams had difficulty relying on just one concept. Each team found that using a single concept was not flexible enough to allow it to address variations in terrain, the enemy situation, and changing conditions.

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[8] See Appendix A of this document for the scenario briefing given at each war game, and Appendix B for the detailed descriptions of the operational concepts.

[9] Baghdad was selected for both its currency and the wealth of open source information available on the city and the forces likely to defend it.

[10] Two teams briefed from maps provided by JAWP. One of the three teams (*Nodal Isolation*) gave its outbrief in the form of a PowerPoint presentation (see Appendix C of this document).

3. War Game II

3.1 Introduction

War Game II used the same scenario, forces, and mission as War Game I. The goal of the second war game was to explore which of the six operational concepts were preferred by the participants and to expand on how those concepts might be employed. Each team could choose only one of the concepts, explain its choice, and then develop an employment scheme.

The game began with briefings on the scenario, the mission, Blue and Red forces, and the operational concepts.[11] The participants then broke out into two Blue Teams (A and B), each with an assigned Red representative who provided an opposing force perspective as the Blue Teams formed their plans. Each team was instructed to formulate a rough plan to accomplish their assigned mission, a plan built primarily on one of the six operational concepts listed in the briefing materials. The teams were allowed to list several other operational concepts as having supporting roles, but they had to select one as their primary concept.

On the last day of the game, the Blue Teams briefed their plans.[12] As each team briefed its plans, the Red Team commented on what its reactions would have been, passed judgment on the likelihood of success, and revealed the "ground truth," that is, the actual location of all Red units.

3.2 Blue Team A

3.2.1 Blue Team A's Concept Assessment

This team developed six criteria of their own to evaluate each of the six operational concepts:

- The speed at which an operational concept could produce results.

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[11] See Appendices A and B of this document.

[12] See Appendix D for Team A's brief, and Appendix E for Team B's brief.

- The defeat mechanism used.
- The risk to Blue forces and of collateral damage.
- The degree to which the operational concept relied on various kinds of sensor capabilities.
- The likely response of the local population.
- The degree to which transition of the city to non-military control was facilitated.

Based on these criteria, Blue Team A selected *Nodal Capture and Expansion* for its primary operational concept. The team felt this operational concept offered the advantages of reduced overall Blue force requirements and the potential for rapid dominance of Red, while at the same time being logistically demanding and requiring complex planning. Blue Team A selected three other concepts to play complementary roles: *Precision Strike*, *Nodal Isolation*, and *Segment and Capture*.

The team listed the strengths and weaknesses of the other concepts as follows:

- *Soft-Point Capture and Expansion* eases the problem of inserting forces into the city, but this concept is more time consuming because it delays getting at Red's center of gravity.
- *Segment and Capture* allows Blue assets to concentrate on subsets of the Red force, disintegrate Red, and allow for the early transition to normality for some sections of the city. It is, however, time consuming and requires a large Blue force to enter the city, heightening the casualty risks for Blue.
- *Nodal Capture* permits taking positive control of nodes, protecting them from Red and denying them to Red. But without spreading out from these nodes, their seizure might not suffice to cause a rapid Red collapse.
- *Nodal Isolation* denies Red the support of key nodes, but it does not protect those nodes from being damaged by Red. Neither does this concept allow Blue to derive support from those nodes. Consequently, this concept is less decisive.
- *Precision Strike* is quick and requires minimal Blue "boots on the ground." But it demands more of ISR (intelligence, surveillance,

reconnaissance) assets than they can deliver, increases risks of collateral damage and civilian casualties, potentially wastes efforts against enemy facilities that may be empty, and does not allow Blue to exercise physical control of nodes.

3.2.2 Blue Team A's Plan

Team A's three-phase plan was based on four priorities:

- Block Red interaction with the population.
- Isolate Red C2 elements from the rest of the Red force.
- Seize and protect infrastructure in the city that is vital to the restoration of normalcy.
- Develop the ISR picture *vis-à-vis* Red weapons of massive destruction (WMD), command and control, Special Republican Guard units, and military and political infrastructure.

Phase I

Phase I of the plan began by shaping the battlefield with Psychological Operations (PSYOPS) and Information Operations (IO) directed at Red military units to encourage defections, and the civilian population. This phase would begin days (or perhaps weeks) before the actual assault on the city. The civilian population was seen as a pivotal element in isolating Red. Blue Team A felt that if the majority of the civilian population could be won over to Blue's side or at least to be neutral, it would place Red at a great disadvantage. This early shaping phase would also include extensive Intelligence Preparation of the Battlefield (IPB), with special attention to locating Red WMD and C2 assets.

As a part of this *shaping* effort, attempts would be made to use defecting Red personnel from units outside the city. They would be integrated in small numbers into some Blue units entering the city. The team thought that use of these indigenous personnel would benefit relations with the civilian population because it would make Blue seem less like an invading force. Defecting Red personnel might also have better understanding of the city, its culture, and its inhabitants.

Phase II

Phase II of the plan was "softening" strikes on Red centers of gravity. It began with a joint suppression of enemy air defenses (SEAD) over several hours, followed by extensive precision strikes on Special Republican Guard units in the city center. These strikes were closely followed by a large-scale air assault into the same area, along with extensive electronic and information attacks on Red C2 elements and the civilian communications infrastructure. This would block Red's message from getting out and allow Blue to influence civilians and Red military personnel. The Blue Team saw a friendly or benign populace as a potentially huge human intelligence asset.

Within the next few hours, ground assaults would be directed at both airports from outside the city. Shortly thereafter, a large number of separate air and ground assaults would be directed at capturing about a dozen key nodes (e.g., water, power, telephone, food) across the city. To restrict Red's ability to react to these attacks and mass, air support assets would cover the major bridges and junctions with fires.

Phase III

After some short period (6 to 36 hours) of consolidation, Blue forces would then expand outward from these areas in Phase III. This expansion would be facilitated by two factors.

- First, additional Blue forces would advance into the city along the broadest available corridors to link up with previously inserted forces.
- Second, Red forces would be weakened and demoralized by the shock of Blue's attack, their own segmentation, and the loss of access to much of the city's support infrastructure.

During these operations, the *shaping* of the information environment would continue, with Red forces and the civilian population inundated with information on how Red had lost control of the city. Where only scattered resistance remained, Blue would revert to a law enforcement role. As soon as possible, secured sections of the city would be returned to civilian control, making heavy use of local government assets and non-governmental organizations (NGOs).

3.2.3 Blue Team A's Assessment of Plan

Blue Team A felt that this rapid and decisive approach would pay dividends in fewer Blue and civilian casualties. The rapid cascading effects on Red would induce shock and early disintegration. Damage to the local infrastructure would be reduced by the relatively limited area undergoing aerial attack and by Blue taking quick control of key infrastructure nodes.

However, Blue Team A had concerns about aspects of its plan, for example:

- One concern related to both the amount of helicopter lift required and the vulnerability of that lift while crossing unsecured areas of the city. Others felt this risk could be mitigated by speed and exploitation of noise-only munitions and darkness.
- Team members were also concerned by the demand placed on Blue ISR capabilities. To locate and develop an in-depth understanding of a city's nodes would require substantial ISR coverage and persistence, as would locating and tracking Red forces.
- Logistical support for those forces inserted into the city was another point of concern, particularly if linkups with other Blue forces were delayed. For these complex operations, the team recognized the need for consistent and effective command and control.

However, the team felt that many of these potential weaknesses could be substantially mitigated with training and tactics, techniques, and procedures. In all of these areas of concern, the team judged today's capabilities sufficient to make their plan feasible. But at the same time, team members felt that shortfalls in areas where their assumptions prove too optimistic would seriously affect the viability of their plan.

In short, Blue Team A felt that its plan did entail some risk but offered the potential for a rapid victory with minimal collateral damage, minimal civilian casualties, and minimal Blue losses.

3.2.4 Red Team's Perspectives on Blue Team A's Plan

Red's perspectives on Blue Team A's plan were as follows:

- The large air assault into the city center would cost Blue some significant losses, both in personnel and helicopters.

- The follow-on ground force penetrations into the city would further add to Blue losses because of close contact with Red forces.
- Because of Blue ISR limitations, at least some of the Blue nodal attacks would run into surprisingly heavy resistance and might fail or suffer substantial losses.
- In the aggregate, this Blue course of action could likely lead to a rapid Red collapse because of the sudden loss of control of much of the city's key infrastructure and the destruction of Red's best military units.
- That rapid collapse of Red would serve to partially reduce the number of Blue and civilian casualties. Capturing many of the nodes would also preserve them from destruction.

3.3 Blue Team B

3.3.1 Blue Team B's Concept Assessment and Selection

For Blue Team B, the objectives of this war game were twofold: Destroy Red's governmental control and destroy Red WMD.[13] Among the actions Blue Team B took to accomplish these objectives were to list the advantages and disadvantages of each concept when focusing on the stated objectives.

Team members then compared the abilities of the concepts to achieve essential tasks (such as transitioning to a friendly government) while operating within political restraints (such as maintaining positive public support, and not heavily damaging the urban infrastructure).

After reviewing each concept, Blue Team B chose *Segment and Capture* as the primary concept for defeating Red, with support from the following concepts:

- *Precision Strike*
- *Soft-Point Capture and Expansion*
- *Nodal Capture*
- *Nodal Capture and Expansion*

The team believed that *Segment and Capture* would allow Blue to take advantage of physical, political, and cultural differences within the city to "divide and conquer." *Segment and Capture* also offered the capability to defeat enemy

[13] See the Team B Briefing in Appendix E of this document.

forces in detail by preventing their massing, and by segmenting and disrupting Red's logistical system. This capability should also allow Blue to mass forces at locations and times of its own choosing.

Nevertheless, Blue Team B also uncovered several disadvantages, for example:

- the need for high levels of force protection (the attack being ground-centric and involving supply lines inside the city),
- a risk of losing nodes to sabotage (because the operation would not be as rapid as some other approaches), and
- the high probability of collateral damage.

The team listed the strengths and weaknesses of each of the other competing concepts (illustrated in **Table 1** on page 14).[14]

3.3.2 Blue Team B's Plan

The team's priorities were as follows:

- detach the majority of the population from the Red regime's control,
- separate the three types of forces (regular, Republican Guard, and Special Republican Guard) from each other,
- isolate and destroy the leadership (and military forces, as needed), and
- quickly return large portions of the city to normalcy.

Phase I

Phase I of the campaign consisted of an intensive IO campaign centered on winning support of the populace on the eastern side of the river, followed by attack into the eastern side of the city, with an eye toward separating it from the western side, and the control of the Red regime (Segment Line 1). One Marine regiment would attack from the northeast, while another would attack from the southeast (with one in reserve).

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[14] For a complete listing of advantages and disadvantages, see Appendix H of this document.

Table 1. Comparing the Concepts

Concept	Strengths	Weaknesses
Nodal Capture	▸ Shock of the attack ▸ The ability to quickly seize and control nodes	▸ The difficulty of rapidly seizing multiple nodes ▸ High risk of required air assaults ▸ High logistics requirements ▸ Risk of destruction of nodes ▸ The need for defense of the nodes (as opposed to offensive movement) after their seizure
Nodal Capture and Expansion	▸ Many of the same advantages and disadvantages of *Nodal Capture*. ▸ Creation of "islands" for logistics inflow ▸ Offensive nature of the expansion phase	▸ Increased risk ▸ A larger force requirement than *Nodal Capture* ▸ Sustainment issues
Soft-Point Capture and Expansion	▸ The ability to insert forces into an undefended location, providing an element of surprise	▸ Risk of moving into a soft point that was actually well defended ▸ Length of time needed to seriously affect Red
Precision Strike	▸ Small ground force presence ▸ Reduced logistics requirements ▸ Decreased risk of Blue casualties	▸ Risk of significant collateral damage ▸ Need for intensive ISR
Nodal Isolation	▸ Minimal ground force presence ▸ Reduced logistics ▸ Need for minimal force protection	▸ Extraordinarily difficult to do because of the limitations of current military capabilities to remotely isolate

Phase I (continued)

Bridge access would be denied to Red forces through the use of precision strikes, area-denial devices, non-lethal weapons (NLWs), and mines. Red forces trapped on the east side of the river would either be ignored, by-passed, and/or engaged, depending on their location relative to critical nodes and Blue forces.[15]

Blue Team B believed that resistance by the population on this side of the river would be light or nonexistent.

Phase II

Concurrent with Phase I, Segment Line 3 would be created using a combination of persistent ISR and remote and airborne platform fires. Segment Line 3 would segregate the highly motivated Special Republican Guard (and the Red leadership) from the majority of the population, from reinforcement, and from avenues of escape.

Red units within the zone created by Segment Lines 1 and 2 would be struck with air power and other remote fires. This segmentation was meant to further detach Red's leadership and the Special Republican Guard from the population, further eroding their grip on power.

Phase II entailed a three-pronged assault by Army units into the western side of the city. The Army units were to push to Segment Line 2 and hold there. See Blue Team B's plan on the next page (**Figure 1** on page 16).

3.3.3 Blue Team B's Assessment of Plan

The members of Blue Team B had concerns about their ability to carry out this plan, among them:

- They were unsure whether Segment Line 3 could be effective without physically controlling it with ground forces. The requirements for ISR and a responsive sensor-to-shooter link were viewed as difficult to achieve using today's technologies and/or organization.

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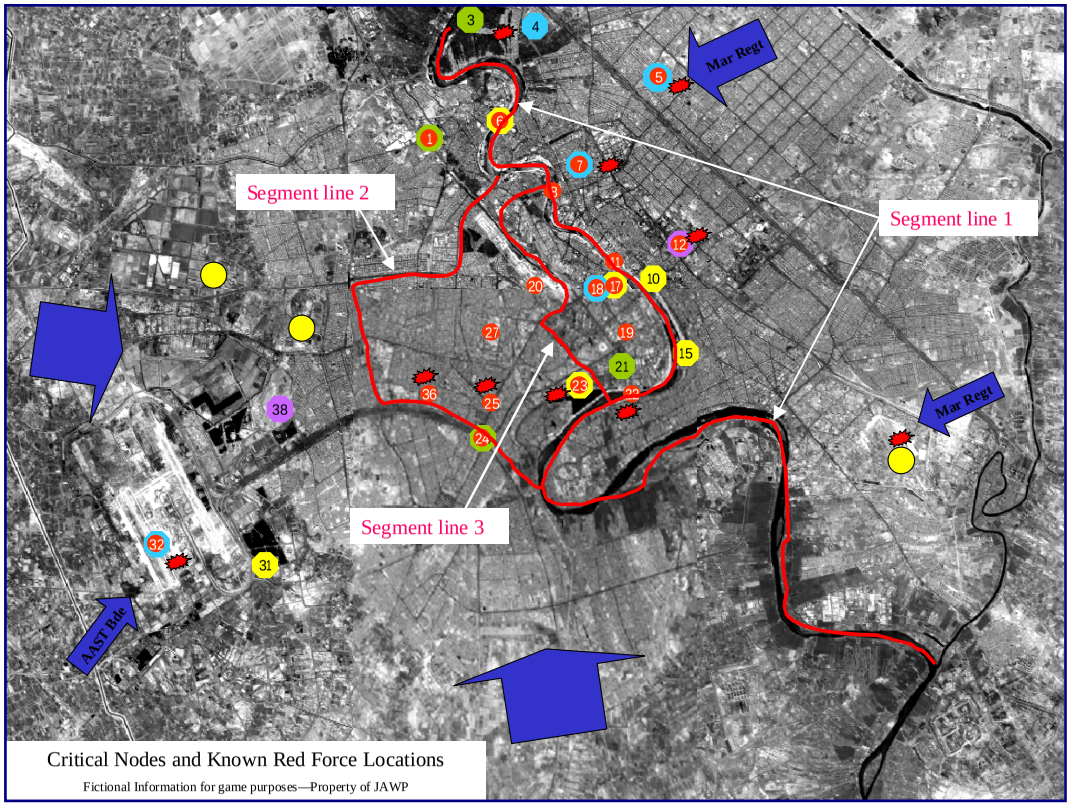
[15] For information on how Blue Team B dealt with the nodes throughout the city, see Appendix E of this document.



36 All Red dots refer to known Red force locations. 8, 11, 19, 20, 22, 25, 27, 36	10 A solid dot of any other color is a critical node of some sort. 3, 4, 10, 15, 21, 31, 38	A yellow circle without a number is a key node in the attack plan for the Blue Team.
A planned target site for Blue forces.	18 A dot that's red in the middle and a different color around the outside is a Red force collocated with a critical node. 1, 5, 6, 7, 12, 17, 18, 23, 24, 32	Blue arrows are vectors of advance. AAST Brigade (1 arrow – lower left-hand corner) Mar Regt (2 arrows – right side and upper right-hand corner)

Figure 1. Blue Team B's Plan

- The WMD threat—whether due to hostile release or unintentional release caused by Blue fires—was a major concern. However, the team believed there was little it could do with today's technologies and organization to mitigate the risk to military and civilians alike besides having a robust WMD consequence management capability up front with the ground forces.

3.3.4 Red Team's Perspectives on Blue Team B's Plan

Red's perspectives on Blue Team B's plan were as follows:

- The overall slower pace (relative to Blue Team A's plan) of this course of action would have resulted in a longer conflict, and thus seemed likely to increase civilian casualties and give Red more time to adapt and inflame public opinion against Blue.
- The slower pace would also allow Red more control of at least some of the nodes in the city, putting those nodes at greater risk of sabotage.
- The major ground-force penetrations from multiple directions would result in many close-combat situations, thus causing significant Blue casualties.
- With today's capabilities, Blue forces would have had difficulty maintaining their segment lines in the city, with fleeting targets severely stressing current ISR capabilities and sensor-to-shooter reaction times.
- The Blue precision strike on Red artillery located in a hospital would have caused the dispersal of an aerosol cloud from detonation of a stockpile of chemical weapons stored there. The chemical cloud would drift south across the city and cause massive civilian casualties, significantly disrupting Blue actions in that part of the city.

3.4 Red Team's "Lessons Learned"

At the conclusion of War Game II, the Red Team presented its lessons learned and additional comments on capabilities that Blue needed.[16]

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[16] See Appendix F, DART Perspectives: JAWP Urban War Game, of this document.

- When used as stand-alone primary operational concepts, neither concept chosen by the Teams A (*Nodal Capture and Expansion*) and B (*Segment and Capture*) was considered revolutionary with today's capabilities. Neither concept was likely to reduce the high Blue and civilian casualties usually associated with military operations on urban terrain (MOUT). Both concepts would benefit greatly from enhanced non-lethal capabilities.
- The Red Team further commented on the *Precision Strike* concept as not viable as a stand-alone concept. Its primary weakness was that Red was unlikely to surrender to precision attacks alone. Another limitation was that to reach its full potential, this concept would require ISR capabilities significantly more intrusive and persistent than what today's ISR capabilities possess.

Red Team's Comments on Needed Blue Capabilities

- **Non-lethal weapons.** NLWs will be a key tool for Blue to keep both civilian and Blue losses low. However, that tool would need to be carefully integrated into the combined arms team, including Blue IO efforts, as the enemy will try to portray NLWs in a negative light. The Red Team felt that the biggest hurdles for NLWs were not technical but rather policy issues. Efforts to develop NLWs will need to address policy-related issues if those tools are to reach their full potential.
- **Mass casualty mitigation for WMD events.** Any WMD event in the urban environment would severely strain a joint force's medical, water purification, and food distribution resources. This would in turn demand a greater ability of a joint force to work with NGOs and other non-DoD organizations in an effort to tap outside sources of support. Dealing with the population will also require a substantial number of interpreters.
- **Integration of foreign military personnel.** Blue units should have the capability to integrate defecting enemy personnel, much like the Kit Carson scouts from Vietnam. (The Kit Carson scouts were composed of Viet Cong and North Vietnamese Army personnel that had surrendered and were later employed by US forces as scouts.) A system is needed that allows "turned" per-

sonnel to be quickly trained and integrated into the Blue force at the level of the small unit. These indigenous personnel would make working with the local population easier because of their local knowledge and language skills. The same personnel would also facilitate transition efforts and provide the cadre for a post-conflict security force.

- **Counter-sniper.** The likely prevalence of snipers in MOUT and the suitability of the terrain for hiding snipers will require Blue to field a robust counter-sniper capability. This capability could come in the form of Blue's own hunter-killer sniper teams, or a range of other lethal or non-lethal means.

3.5 War Game II Summary

In this war game the various operational concepts were not used in isolation.

- When forced to choose a primary concept, Blue Teams resorted to using other concepts in complementary roles.
- Blue players argued that no single operational concept would give them sufficient flexibility or capability.
- Both Blue and Red players stressed the inadequacy of current ISR capabilities (scope, responsiveness, intrusiveness, and connectivity), and cited a need for both armed and unarmed unmanned aerial vehicles (UAVs) to mitigate risks and quickly exploit opportunities.

4. War Game III

4.1 Introduction

War Game III used the same scenario, forces, and mission of the first two war games. Unlike the previous experiments, this game concentrated on just one operational concept, *Soft-Point Capture and Expansion*. Participants were asked to keep three key questions in mind:

- Would the concept work?
- Would it work with today's capabilities?
- Are there capabilities on the horizon (by 2015) that could make the concept substantially more feasible?

4.2 Blue's Plan of Operation

4.2.1 Shaping Operations

The Blue plan began with shaping operations against key nodes in the city. Most of that shaping used remote delivery means and relied heavily on combinations of non-lethal and non-kinetic tools.

One goal of this shaping campaign was to get much of the civilian population to leave the city and move to camps set up by Blue outside the city. Extracting civilians from the city would deny Red forces "cover" and overall civilian losses would be reduced. Blue could also better support civilians in the more benign environment. As an example of how this would be done, Blue planned the deployment of non-lethal area-denial munitions that would drive people away from the Red-controlled food distribution points.

- To limit Blue risk, these munitions would be delivered via UAVs and delivered continually over time to maintain the desired effect for an extended period.
- At the same time, leaflets would be dropped informing the civilians of the alternate food sources (in the camps) and suggested egress routes.

- This last effort would be reinforced with a coordinated PSYOPS campaign to both turn the population against Red and convince them to relocate. Without the ability to deliver food to the population, Red would lose some measure of its control of the people.

While all systems needed for this tactic are not currently fielded, Blue felt that the technology involved was available off-the-shelf, and thus capabilities could be procured rapidly.

Blue planned to employ computer network attacks to remotely control various telephone, electrical, and communications nodes in the city. Non-lethal area-denial munitions could close down bridges while preserving them for later use. Electro-magnetic pulse weapons would attack Red C2 nodes. Blue would also use conventional munitions for some attacks. Overall, these attacks on infrastructure were designed to minimize damage and allow for rapid post-conflict reconstitution. These shaping efforts were intended to keep Blue casualties to a minimum by inserting few Blue personnel into the city, and by not flying manned aircraft at low altitudes over the city. The lower altitudes would be the exclusive domain of UAVs.

The collective effect of these shaping operations would make the environment more favorable for later Blue incursions while weakening Red. For example, with control of the electrical grid, Blue could selectively turn off the lights to maintain their night vision advantage. With fewer civilians in the city, Blue would encounter fewer clogged roads and could engage Red with less danger to civilians. Blue control of much of the city's infrastructure would deny the support of those nodes to Red and thus weaken it, while simultaneously reinforcing the PSYOPS message that Red was not in control of the city.

4.2.2 Capturing the City

Reconnaissance

With the urban environment shaped to Blue's favor, Blue would then begin reconnaissance of three routes (from the south, northwest, and northeast) into the city center (on the west bank of the river) where the core of Red's military strength was deployed. The initial objective of those Blue forces would be to destroy those Red forces in the city center and take control of critical nodes located there. ISR systems would determine which routes

would provide the least resistance to Blue ground forces. These routes would be selected to de-conflict with the egress routes suggested to the civilian population.

Attack

Once the best corridors of entry were located, Blue ground forces would begin their attack inward. The Blue ground force would avoid the two main airports. Blue assumed that both those locations would be heavily defended and pre-registered by Red artillery.

Once that portion of the city was secure, Blue would expand outward against a presumably weaker Red, weaker because of the loss of key military units, and because Red would no longer receive support from most of the city's infrastructure. Red units would be gradually pushed outward until they were either destroyed or pushed outside of the city where they could easily be dealt with.

Civilian control

As portions of the city were captured from Red, Blue would reinsert local civilians with infrastructure management expertise. These individuals would be recruited by Blue and drawn from the civilian support camps run by Blue outside the city. As security was restored to portions of the city, and infrastructure returned to service, segments of the population could return.

4.2.3 Blue Team's Comments About the Operation

Members of the Blue Team also made several general comments about their outlook on this operation.

- Relating to their heavy emphasis on PSYOPS, computer network attacks, and IO, Blue Team members stated that *physical control* does not equate to *electronic control*.
- A second comment related to the need to support large numbers of population outside of the city. Blue Team felt that the joint task force's cooperation with other agencies and NGOs was key. Without that cooperation, the task force would have great difficulty supporting the civilian logistical needs in addition to its own.

- A third comment related to how to define a soft point for the purpose of their plan. They stated that a soft point could be defined by the absence of Red, the absence of civilians, the attitudes of the civilians, and/or the terrain

4.3 Red Team's Comments

The Red Team believed the Blue course of action would cause Red considerable difficulties, but the approach would be difficult for a US force to implement.

- **ISR capabilities.** Blue would have difficulty clearly identifying approach routes into the city because of the limitations of today's ISR capabilities. Many Red forces on a particular axis of approach would be missed because they blend in with the populace. As a consequence, Blue might suffer significant losses once it entered the city.
- **Evacuations.** Civilians do not like to leave their houses and possessions. They would be likely to send only one family member to get food, complicating Blue's attempts to get them to evacuate. Red could also prevent civilians leaving by shooting those who try.
- **Civilian support camps.** While this type of camp is certainly possible today, the scale of the support needed for a population exceeding five million people would have drawn substantial logistical resources away from Blue. That diversion of resources would have required an operational pause for Blue while these facilities were set up.
- **Manned aircraft use.** By excluding manned aircraft from low-altitude missions over the city, survivability of these aircraft would be enhanced but at a substantial cost in direct fire support, especially from attack helicopters. One approach would be using armed UAVs in large numbers.

Overall, the Red Team thought this plan would have been a worst-case scenario for Red, relative to earlier war games. The rapid capture of many critical nodes, while limiting civilian casualties, would have undermined Red's basic defensive strategy. However, the limitations of today's capabilities in several areas and the high potential for Red to block civilian exit cast doubt on the plan's potential for success.

4.4 Capabilities Needed: Conclusions

Both the Red and Blue Teams listed capabilities that would assist this concept of operation. These capabilities were then matched to elements of the USECT Scheme (see **Table 2** and **Table 3** below). Capabilities applying to more than one area of USECT are listed under each applicable area. These USECT elements are briefly described in the *Doctrine for Joint Urban Operations*:

> A framework for planning and conducting urban operations is provided by the activities of **"understand," "shape," "engage," "consolidate,"** and **"transition."** Although discussed sequentially, they function together in an interdependent, continuous, and simultaneous cycle. Understanding is continuous, and while shaping, engagement, consolidation, and transition may be considered as sequential, these activities are strongly interrelated, with the joint force potentially conducting several activities at the same time.[17]

Table 2. Red Team List: Capabilities Needed

USECT Elements	Capabilities Needed
Understand	▸ Covert robotic ground sensors
	▸ Through-wall sensors
	▸ Improved coordination of manned and robotic sensor systems
Shape	▸ Improved translation devices
	▸ Re-supply systems for isolated forces
	▸ Systems for ground evacuation of wounded personnel
	▸ Improved initial medical care of wounded
	▸ Doctrine that places greater emphasis on supporting the needs of the civilian population
Engage	▸ Incapacitating microwave or chemical NLWs
	▸ Scalable air-delivered precision munitions

[17] US Department of Defense, Joint Staff, *Doctrine for Joint Urban Operations*, Joint Publication 3-06, 16 September 2002, pp. II-8 to II-13.

USECT Elements	Capabilities Needed
	▸ Doctrine that better supports the IO needs of the Blue concept
Consolidate	▸ N/A
Transition	▸ Improved translation devices ▸ Doctrine that places greater emphasis on supporting the needs of the civilian population

Table 3. Blue Team List: Capabilities Needed

USECT Elements	Capabilities Needed
Understand	▸ Improved ISR
	▸ Laser scanners for pre-mapping cities of interest
	▸ Tracking dogs for locating Red personnel and explosives
	▸ Around-the-corner viewing tools
	▸ Robots for exploring sewers and pipes
	▸ Greater emphasis on cultural intelligence
	▸ Pre-conflict computer network reconnaissance
Shape	▸ NLWs for area denial
	▸ Remote nodal control tools
	▸ Improved deployable consequence management units
	▸ Improved on-site medical care
	▸ Re-supply systems that do not place personnel at risk
	▸ Doctrine that emphasizes draining the civilian population from the city
Engage	▸ Micro-UAVs (~15 lbs.) with built-in warheads that can be directed to targets via laser designators on rifles
	▸ Doctrinal shift away from conventional artillery toward smaller precision-guided munitions
Consolidate	—

USECT Elements	Capabilities Needed
Transition	▸ Greater emphasis on cultural intelligence
Capabilities that do not fit under USECT	
	▸ A large abandoned urban landscape for training
	▸ A Marine Corps Information Operations Military Occupational Specialty

Some interesting comparisons can be made between these two lists and the list of 31 needed capabilities[18] in the *DoD Urban Roadmap* for improving urban capabilities.

- One notable difference is that the *DoD Urban Roadmap* refers to *capabilities* rather than *specific tools*. While some suggested tools do appear in the expanded descriptions of some capabilities, the capabilities themselves are described in terms of the desired effect. The Red and Blue Team lists are a mix of capabilities and specific tools to achieve capabilities.
- Another difference is that the lists produced by the Red and Blue Teams were not meant to be comprehensive but rather lists of capability needs stimulated by the War Game III scenario.
- The most useful comparison can be made by highlighting those capabilities that appear on all three lists:
  - Dealing with civilians (e.g., understanding them, controlling their movement, supporting them, and separating them from Red).
  - Engaging precisely with minimal collateral damage (kinetically or non-kinetically).
  - Providing medical care for Blue casualties (treatment and evacuation).
  - Re-supplying personnel in the city.

[18] The list is reprinted in Annex 1 of this document. It was originally printed in Volume II of the *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations*, pp. III-1 to III-3 and B-3 to B-37.

5. War Game IV

5.1 Introduction

War Game IV examined the concept of *Nodal Isolation*. According to this concept, the joint force commander seizes control of a city (based on Arlington, Virginia) from a terrorist force by performing the following:

> (physically and psychologically) [sealing] critical (structural and non-structural) nodes from an adversary in order to deny him sources of support, freedom of movement, and to prevent contact between adversary forces.[19]

5.2 Methodology

The game design brought Red and Blue together in a cooperative environment. This approach, a *transparent war game*, allows Red and Blue players to share ideas and experiences directly. Blue's goal, as defined by the commander's intent, was to perform the following:

- Remotely control key nodes (water supply, electricity, telephone, and internet connections) in order to induce the population to rise up against the adversary forces occupying the city; and
- Control radio and television broadcasts in the city to further isolate the adversary from the city's population.

Red's goal was to counter Blue and maintain control of the city. A notional city modeled on Arlington, Virginia, framed the discussion. Over the course of the game, the players discussed each of the following infrastructure systems in turn: water and wastewater, electricity, and telephones and telecom-

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[19] Extracted from *Nodal Isolation* section in Appendix B of this document. The paper states further that the approach "requires knowing which nodes are critical and how they interact. The joint force commander seeks to minimize ground force presence by isolating nodes largely through the use of counter-mobility assets and remote fires. Isolating the city from (or controlling) outside sources of supply and reinforcement is a key requirement."

munications. The players also identified technologies that would help a future joint force commander more effectively execute the *Nodal Isolation* concept.

5.3 Water and Wastewater

Mr. Mike Collins, a water systems engineer with Arlington County, briefed the players on water vulnerabilities. The briefing allowed the players to explore several vulnerabilities in detail and ask a range of "what if" questions. Specific vulnerabilities discussed included the following.

Actual and perceived contamination. Mr. Collins noted that the water department has no practical experience *decontaminating* the system. How effective decontamination might be is an open question, particularly when dealing with radiological weapons that could contaminate the pipes. In general, the attendees agreed that the quantity of water involved would dilute the effect of most harmful agents, although, again, we lack recent empirical evidence; and some experts believe that certain agents could be effective in relatively small amounts. *Spot contamination* via *back-pumping* is a more likely strategy and could conceivably contaminate a neighborhood. The players also considered contaminating the system with dyes that—if not diluted—could induce people to stop using the water for a period of time.

SCADA (supervisory control and data acquisition). Mr. Collins noted that most water systems allow remote access and control through a SCADA interface. Hacking into the system is possible and could conceivably allow Blue to manipulate the water system at will in a non-destructive manner. Taking down the electricity does not automatically take SCADA offline; most systems (in the United States, at least) have generator backups.

Chemical storage and transport. While this remains a real-world vulnerability, the players saw little advantage to Blue in using stored chemicals as an improvised weapon. Instead, they considered the possibility of denying Red access to chemicals required for the treatment process. Mr. Collins agreed that lack of chemicals would degrade the quality of water over time, but filtering and flocculation alone would allow the system to function at a reduced level.

Workforce. The players asked several questions about the water system workforce such as how many workers does the system require? What are their roles? How many are on duty at a given moment? Blue considered the possibility of targeting key elements of the workforce in some way, although Mr.

Collins responded that Red could probably keep the system running even at a reduced level. Blue also discussed taking over the water system command center. Again, Mr. Collins suggested that Red could work around the problem, this time by simply circumventing the control center and sending workers out into the field.[20]

Single points of failure. Although every system is different, Mr. Collins did note that most water systems have single points of failure. That said, he also observed that engineers can simply reroute around many problems. Blue discussed the possibility of destroying these points of failure or denying Red access to them, perhaps through the use of NLWs. This discussion (and others) illustrated the tradeoffs between destroying a system and simply disabling it for a period of time. The players generally agreed that the ability to manipulate a system at will offers more advantages but is also more difficult to achieve.[21]

5.4 Electricity

The players reviewed how the electrical delivery and distribution system works and discussed how to disable it. They considered a range of non-lethal attacks, from graphite fibers to hacking. As with the case of the water treatment and distribution system, the players agreed that it is most often better to manipulate the system than to physically destroy it. In other words, it is just as important from a nodal isolation perspective to be able to turn the service *on* as it is to turn it *off*. Specific points of discussion included the following:

Single points of failure. Like the water system, engineers can route around many failures. The players considered the scenario and noted the role of substations in both distributing power within the city and in bringing power in from external sources. The players generally agreed that disabling or destroying a handful of key substations would critically injure the system. Depend-

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[20] The option of simply chasing away the workforce from key nodes was discounted because absent human supervision, semi-automated equipment might eventually severely damage itself.

[21] One option discussed was to destroy a key long-lead-time piece of equipment, but have a replacement ready because of an earlier order from the manufacturer. This, of course, would require exact knowledge of the equipment in question.

ing on the nature of the substation, replacing key parts could take a few days or a few months.

SCADA. Like the water SCADA system, the electrical SCADA system offers Blue the opportunity to manipulate the electrical system without harming it.

Cascading effects. The players recognized the central role the electrical power plays relative to the other critical infrastructures. For instance, they noted the second-order effects that the loss of electrical power can have on transportation, communications, health services, heating and air conditioning, and others. More than once, the players also noted that the first- and second-order effects are highly situational. Arlington, Virginia, differs in many ways from the cities around the world. This raised the issue of just how critical IPB will be when conducting a *Nodal Isolation* operation.

5.5 Telephone and Telecommunications

The players again discussed the vulnerabilities of the specific system and means of shutting it down (denial-of-service, selective destruction, jamming, NLW area denial). Specific points of interest were raised.

Denial-of-service attacks. It is possible to shut down the telephone system using denial of service attack. Many large phone systems in the United States have improved their ability to defend against such attacks, but this capability will not exist uniformly around the globe.

Electricity and cell phones. Taking down the electrical system will eventually take down the cell phone system.[22]

5.6 The Pentagon

The scenario included the Pentagon and identified it as "the national government compound."[23] The players considered this site to be largely self-sufficient and redundant. They also considered it to be a legitimate military target (as opposed to an infrastructure node to be isolated). Assuming that they were required to isolate it, they discussed options such as denying the

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[22] Many nodes within the telecommunications system have battery backup. But power outages that extend more than several days will exhaust battery backups.

[23] Red was using the Pentagon as a C^3 (command, control, and communications) node.

facility food or jamming its communications.

5.7 Summary

5.7.1 Technologies

To close the event, the players identified future technologies that might improve our ability to conduct nodal isolation. The following list summarizes the items discussed.

- Advanced sensory irritants (for example, noisemakers, maloderants, non-incendiary precision smoke)[24]
- Better urban IPB tools
- Better urban ISR, including ultra-small UAVs
- Mini-lasers with scalable effects
- Nano-tech sabotage
- Scalable electro-magnetic pulse weapons

Other Comments

- In general, the players agreed that the ability to deliver the weapons or technologies from a distance without causing excessive or permanent collateral damage was desirable.
- They also expressed frustration that in many situations, international law allows the military to take a lethal approach but constrains it from employing a non-lethal option.
- Finally, they discussed the need for a class of weapons that deliver niche effects (non-explosive effects that extend beyond traditional NLWs).[25]

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[24] Preferably affecting multiple senses simultaneously. Also called for were area-denial tools that have through-wall effects.

[25] One concern was the difficulty of testing NLW for consistent effects. A key consideration with all NLW use is the ability to perform BDA (Battle Damage Assessment). When the effect does not entail the overt physical destruction of a visible entity, BDA becomes very difficult. NLWs should also be combined with IO and lethal weapons for maximum effect.

5.7.2 Key Issues and Insights

The following list summarizes the key issues and insights identified during the game.

- No silver bullet exists—*Nodal Isolation* requires a holistic strategy. A single approach directed toward a single infrastructure is unlikely to succeed.
- The ability to execute *Nodal Isolation* will be highly situational and will require a solid understanding of how a given city's infrastructures interact among themselves and with the broader external infrastructures.
- *Nodal Isolation* requires cooperation among several elements and organizations within the military community, including both information and psychological operations.
- *Nodal Isolation* also requires cooperation among elements within the broader government community. It must embrace the full diplomatic, information, military, and economic spectrum.
- Simply destroying critical infrastructure nodes is not sufficient to achieve *Nodal Isolation*. More important is the ability to turn services off and on at will. This is difficult to do from a distance, and in many cases Red will be able to route around attacks.
- Blue must consider how Red can manipulate Blue's nodal isolation activities to Red's favor. Simply turning off selected infrastructures could prove counterproductive if Red is able to direct the city's frustration toward Blue.
- Of the infrastructure networks, disrupting the electrical system would produce the largest number of secondary effects (e.g., transportation, water, telecommunications, commerce) while disrupting the water system will have the fastest effect on habitability.
- The limited number and fixed location of key nodes would simplify Red's defensive scheme, assuming Red understood the importance of each node.

Annex 1.
USECT Scheme: The 31 Capabilities

Overview[26]

The capabilities discussed in this annex do not represent all of the capabilities that a joint force might use to capture an urban area. These capabilities enable a joint force to use the operational concepts previously listed. In this list, the focus is kept on those capabilities that are urban specific. Urban specific is defined as:

> a capability that is only performed in built-up areas or one that is substantially different when performed in the urban environment.

A wide range of military capabilities common to both urban and non-urban environments is not addressed. Air superiority and general logistics capabilities (e.g., "feed the troops") are examples that are not considered urban specific. *The goal is to focus on urban capabilities.* An exception is made in the case of wide-area target destruction because it is a central element in one of the operational concepts (*Rubble-ize*) and because of recent historical precedent (for example, the fighting in Grozny, Chechnya). Greater detail as to what each of these capabilities entails can be found in Appendix B of this volume.

The capabilities are separated and labeled according to the USECT scheme (Understand, Shape, Engage, Consolidate, and Transition).[27] Each capability was given a letter and number tag.

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[26] Paraphrased from Volume II of the *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations*, pp. III-1 to III-3, For Official Use Only.

[27] The USECT scheme for looking at MOUT is taken from the second draft of Joint Publication 3-06, *Doctrine for Joint Urban Operations*, October 2000. These aspects of an operation may or may not occur sequentially. There is also considerable overlap in what each aspect addresses. In spite of the ambiguity this scheme of breaking down the various components of an operation is very useful. It allows one to group capabilities, based on what those capabilities are designed to achieve.

- The letter refers to the portion(s) of USECT the capability addresses.
- The number functions to simply differentiate between capabilities within each USECT component and has no relation to relative value

Note: Two of the capabilities (US4 and UST5) played strong roles in several areas. These capabilities have multiple letters in there designation that reflect the appropriate portions of USECT (i.e., US4 is used in place of a separate U4 and S4).

UNDERSTAND

U1	The ISR capability to **discern what is a node** (not necessarily a structure) along with which ones the enemy controls. This involves a comprehensive and in-depth understanding of all levels of the battlespace: cultural, political, religious, historical, demographic, economic, military, and geographic.
U2	The ISR ability to **locate and identify enemy forces**, including when they are in close proximity to friendly forces or intermixed with civilians.
U3	The ISR capability to **discern Red movement patterns, logistical methods, and intentions** for both.
US4	The ability to **command, control, and communicate** with units operating in the urban environment where radio and GPS (Global Positioning System) work poorly.[28]
UST5	The ability to **coordinate capabilities** across Service, agency, coalition partner, and NGO boundaries.
U6	The ISR capability to **generate an in-depth understanding of the city's population** and its likely future actions and/or reactions.
U7	The ability to do **urban BDA** (Battle Damage Assessment).

[28] LtGen Paul K. Van Riper, USMC (Ret.), "A Concept for Future Military Operations on Urbanized Terrain," p. A3.

UNDERSTAND

U8	The ISR ability to rapidly generate three-dimensional, small-scale, up-to-date **digital maps of the urban battlespace** that include subterranean features and possibly building interiors.
U9	Software and hardware **tools that allow for rehearsal and the assessment of courses of action**. These tools would use digital map information and updated intelligence information on Red, Blue, and White.
U10	The ability to **detect and/or neutralize mines, booby traps, and toxic chemicals**.

SHAPE

S1	The ability to **create barriers on the perimeter of the city** to prevent outside reinforcement and re-supply of enemy forces.[29]
S2	The ability to **maintain a secure front line** within the city to prevent enemy movement into cleared areas.
S3	**Restrict Red's ability to react** via fire or movement. This would include restricting the physical ability to move and fire, restricting the ability to command and control movement and fires, and restricting the inflow of information Red needs to make decisions on movement and fires.
US4	The ability to **command, control, and communicate** with units operating in the urban environment where radio and GPS work poorly.[30]
UST5	The ability to **coordinate capabilities** across Service, agency,

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[29] A 2000 MOUT study sponsored by the Army's Training and Doctrine Command stated that isolating a city in the information age was for the most part impossible. Roger J. Spiller, *Sharp Corners: Urban Operations at Century's End*, p. 98.

[30] Van Riper, "A Concept for Future Military Operations on Urbanized Terrain," p. A3.

SHAPE

	coalition partner, and NGO boundaries.
S6	**Intra-urban transport capability** (land and air) for moving forces, supplies, and wounded to isolated locations within a city.[31]
S7	Conduct **re-supply and casualty evacuations** on the "front line" for units operating in a contiguous fashion.
S8	Capabilities to communicate with, coordinate with, and **influence the local populace**.
S9	The ability to **mislead Red as to the movement and location of Blue** forces in the city.
S10	Conduct **small-unit combined arms operations**.[32]
S11	**Medical capabilities to protect Blue personnel** from disease, psychological stress, and hazardous materials.
S12	**Improved protection for dismounted personnel** from small arms, fragmentation, blast, and heat.
S13	The ability to selectively **disable utility, transportation, and communication systems** in a city for the short or long term.[33]
S14	**Improve infantry's mobility** over urban obstacles.

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[31] A 1997 article on future MOUT concepts called the ability to move between isolated zones within the city critical. Van Riper, "A Concept for Future Military Operations on Urbanized Terrain," p. A4.

[32] A 1997 article by the Marine Corps Combat Development Command called for task organization to be pushed to the "very small unit-level" for MOUT. Van Riper, "A Concept for Future Military Operations on Urbanized Terrain," p. A5.

[33] "For the purposes of military conflict, establishing the capacity to manipulate an adversary's power supply is infinitely superior merely to destroying it, for the simple reason that destruction does not offer the opportunity for control." Spiller, *Sharp Corners: Urban Operations at Century's End*, p. 104.

ENGAGE

E1	The ability to **destroy wide area targets**.
E2	The ability to **destroy point targets with minimal collateral damage**.
E3	The ability to rapidly **clear buildings** with low Blue casualties and a minimum of Blue personnel.
E4	Non-lethal capabilities for **dealing with crowds and Red**, both inside and outside of buildings**.**
E5	**Sniper/counter-sniper capabilities**.
E6	**Urban fire support**.

CONSOLIDATE

C1	**Infrastructure management and repair** capabilities.
C2	Capabilities to **reestablish the rule of law** in portions of the city under Blue control.
C3	The capabilities to **mitigate the effects of WMD (weapons of mass destruction) use** on urban civilian populations and infrastructure.

TRANSITION

UST5	The ability to **coordinate capabilities** across Service, agency, coalition partner, and NGO boundaries.

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Abbreviations and Acronyms

C2	command and control
C3	command, control, and communications
BDA	Battle Damage Assessment
DART	Defense Adaptive Red Team
DoD	Department of Defense
GPS	Global Positioning System
IDA	Institute for Defense Analyses
IO	Information Operations
IPB	Intelligence Preparation of the Battlefield
ISR	intelligence, surveillance, and reconnaissance
JAWP	Joint Advanced Warfighting Program
MOUT	military operations on urban terrain
NGO	non-governmental organization
NLW	non-lethal weapon
PSYOPS	Psychological Operations
SCADA	supervisory control and data acquisition
UAV	unmanned aerial vehicle
USECT	Understand, Shape, Engage, Consolidate, Transition
WMD	weapons of mass destruction

Appendix A.
Background Briefing for War Games 1-3

Maj Christopher A. Arantz, USMC, of the Joint Advanced Warfighting Program (JAWP) at the Institute for Defense Analyses (IDA) took the lead in developing the brief contained in Appendix A of this paper. He was assisted by the following JAWP staff members: Col Mark Bean, USMC; CDR Michael Pease, USN; LTC Kevin Woods, USA; Maj Jenns Robertson, USAF; and GySgt Frederick Rott, USMC.

Note: While this briefing is labeled for Wargame II, it was given for each of the first three war games, with minor labeling changes in each case.

IDA/JAWP
Joint Urban Operations

Wargame II

JAWP Joint Urban Operations Wargame II

• Purpose: Continue the development of the "new approaches to urban operations" articulated in *A DoD Urban Roadmap for Improving Capabilities for Urban Operations.*

• Method:
  • Two teams conducts of deliberate planning with all 6 approaches in a notional scenario. (1.5 days)
  • Each team executes its COA against a dynamic red-team in a *act-react-counteract* style seminar wargame. (1 day)
  • Each team conducts an analysis of *what happened, why they think it happened, and what they recommend based on their analysis*. (1 day)
  • Each team delivers an out brief to assembled IDA/JAWP members and guests for dialogue and continued analysis. (.5 days)

• Endstate: Members of the IDA/JAWP well versed in the conceptual issues associated with the approaches explored, draft concept papers ready for first major revision, key issues highlighted for JAWP writing team, and initial capabilities identified for further exploration / development.

Assumptions

- The game material is intended to be "just-enough" information to support discussions of a general concept in a general setting.
    - In order to define the six concepts/approaches
    - Operational level!
- The relevant aspects of the strategic and operational campaigns (outside of the Capital City) are assumed in Blue favor.
- New capabilities that are technically feasible and relevant can be introduced in order to explore the CONOPs.
- Blue does not have "perfect" information.
- Blue has achieved "isolation" of the city from major movements (company & above)

RCC's MISSION

- WHEN DIRECTED BY THE NCA, COMBLUE WILL CONDUCT JOINT/MULTINATIONAL MILITARY OPERATIONS IN ORDER TO DESTROY ALL MEANS TO PRODUCE AND EMPLOY WMD, CREATE AN ENVIRONMENT FOR IMMEDIATE UN/INTERNATIONAL SUPPORT TO BEGIN RE-CONSTRUCTION OF RED, AND PREPARE FOR THE ESTABLISHMENT OF INTERIM GOVERNMENT.

RCC's INTENT

- Purpose: My intent is to establish an interim government in Red, destroy all means to build and employ WMD, and to create an environment for UN/International relief agencies to operate. This will be accomplished using all elements of national power in conjunction with international efforts.
- Method: We will rapidly build up military combat power in the area to ensure initial force protection. This build up will occur in points to the south, south west, and north, to include forces at sea. I see the enemy force's Center of Gravity (COG) as the Special Republican Guard and the top seats of Governmental Leadership. We will neutralize his COG by attacking his critical vulnerabilities: weak economy, poor infrastructure, weak military forces to the south and north, and his inability to coordinate. We will attack and destroy the enemy's command and control network, AAA/SAM sites and TELs, sea-mine field locations, lines of communications (LOCs), and WMD sites, to include immediately isolating Baghdad from forces trying to retreat to the comfort of the urban environment. Our rapid destruction of enemy forces combined with our mobility should lead to the overthrow and collapse of the SRG and the top leadership. However, we need to be prepared to conduct urban operations in the capital city.
- Endstate: Success is when the current leadership of Red is no longer in power and we control Red, to include natural resources, major infrastructure, and the capital city.

JTF-U Mission

JTF Urban attacks Red Capital City in order to eliminate remaining Red government and military resistance, to control the city and associated national infrastructure, to reduce civilian suffering, and to facilitate transition to stability and support operations.

Endstate: Internationally accepted Interim government of Red in place with enough basic infrastructure to begin governmental transition.

JTF-U Rules of Engagement

- Minimum collateral damage:
  - Infrastructure is key to Interim transition/immediate success. Water stations, electrical power plants, and bridges are designated high priority for transition.
- Cdrs may seize, occupy, and defend religious and culturally sensitive sites (minimize damage). Destruction requires JTF-U approval.
- Segregate and move out of the city all members of the military, government, or key personnel captured or detained.
  - HA sites and EPW sites are segregated. Combatants and non-combatants will be handled separately.

Blue Forces

(assigned to or available to JTF-U)

Joint Force HQ

2nd Army Corps (Hvy)
COSCOM +

ARFOR

8th Inf Div (Mech)
15th Inf Div (Lt/Med)
200th AAST Div (2 Bdes)
179th Bde (Abn)
100th MP Bde
10th Avn Bde

MARFOR

9th MARDIV
12th MAW
5th FSSG

AFFOR

Theater assets available for planning
3rd AEF(s)
1125th UAV Sqdn
Theater ISR (list)

SOF

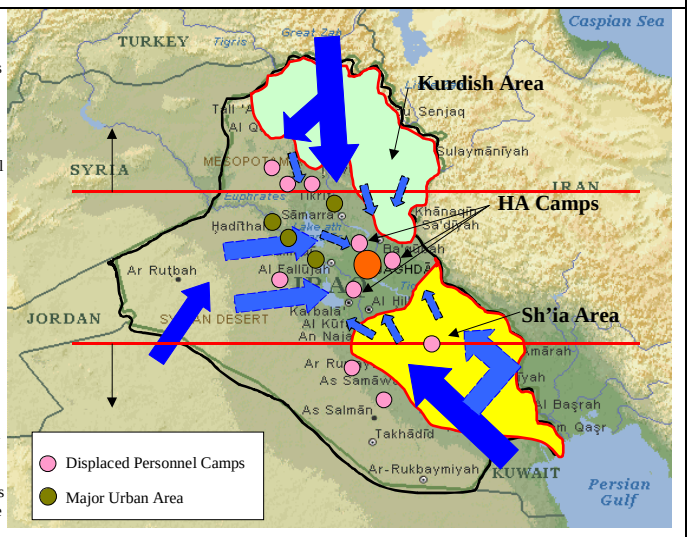
1st and 2nd Bn / 6th SF Group
7th Bn, 1st Ranger Regt
1st Bn, 1st PSOPS Group
125th CA Bn

Background/Chronology

- **25 Jan 2003/D+8** — **US and coalition forces occupy all of Red South of the NFZ**
- **06 Feb 2003/D+20** — **US and coalition forces destroy majority of enemy forces West of Baghdad and North of the NFZ**
- **13 Feb 2003/D+27** — **JTF-U Activation WarnOrd**
- **20 Feb 2003/D+34** — **JTF-U Activated**
- **26 Feb 2003/D+41** — **JTF-U submits plans**
- **5 Mar 2003/D+49** — **JTF-U begins operations on Baghdad**

Situation

- Blue led coalition successfully controls 80% of Red territory after invasion.
  - Blue Forces outside capital are engaged in transition to SASO and HA missions
  - Blue has successfully isolated all but a 250 sq/mi area centered on capital
  - Large displaced persons camps are established to the north and south of the capital
- Red leadership, "elite" forces, some remaining general forces, and special police have retreated to Capital City for final defense.
- Capital City population is mixed in its loyalties (see Human Terrain Map)
- Blue forces have control of all red movement in and out of Baghdad.
- Movement out of the city is coordinated at various locations and encouraged. All non-combatants leaving Baghdad are considered displaced and will be treated as such at camps setup north and south of the city.



- Public utility services in Baghdad are sporadic and limited.
  - Water pumping stations were not damaged by blue forces during the campaign so they are considered 100% operational.
  - Telephone switching stations were targeted, but they do have limited reconstitution capabilities. Phone service in Baghdad is operating at 20% in the general populated areas and 60% around governmental infrastructure.
  - It is estimated that the general population has electrical power. Government infrastructure has some generator capabilities (limited level).

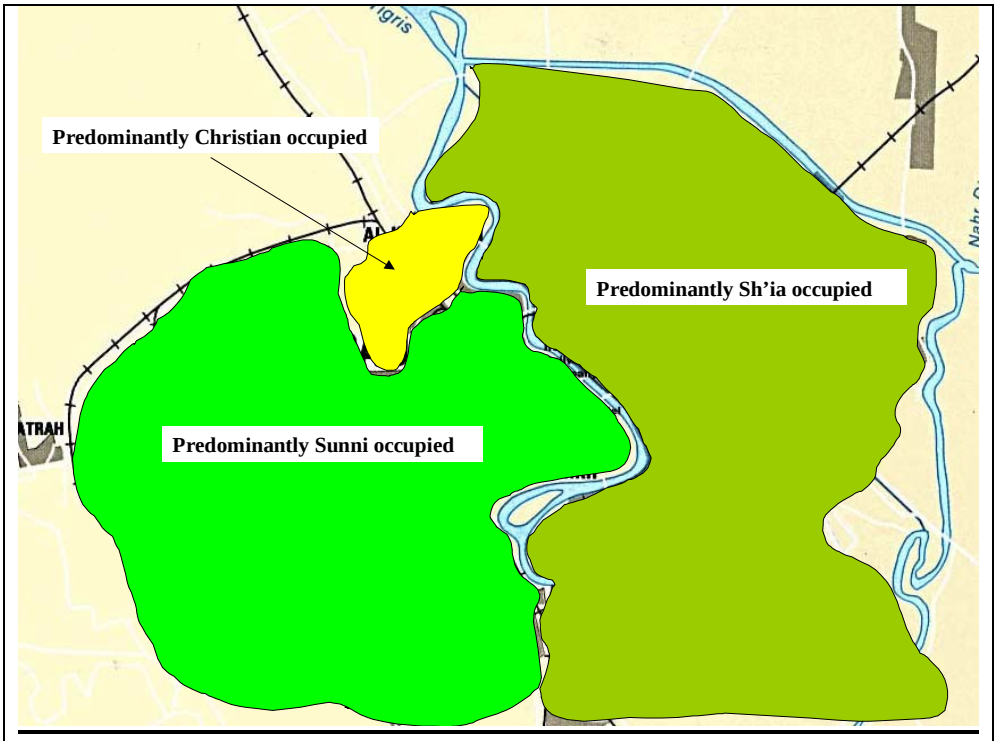
City Situation

- Red Leadership in control but dispersed
  - The red leader has removed himself to a special command location.
- Security services and SRG control key terrain.
- Coalition precision strikes have destroyed 80% of known C2 centers.
- Coalition precision strikes have eliminated all high/med altitude ADA within the city. MANPADS and other low altitude weapons systems do remain in the city (quantity unknown).
- Prepared defenses (trench lines, anti-tank defenses, belted minefields) mark all significant approached to the city.
- Population has limited access to food and water. There are four known food distribution sites controlled by red forces throughout Baghdad.
  - Food is being used to control the population.
  - Fresh water pumped through stations are being controlled by red.
- The situation in Baghdad is chaotic.
  - No police force for general law and order.
  - Movement within Baghdad is limited due to fuel shortages and lack of general services.
  - Very anxious and weary population.

Urban Terrain Analysis

Population

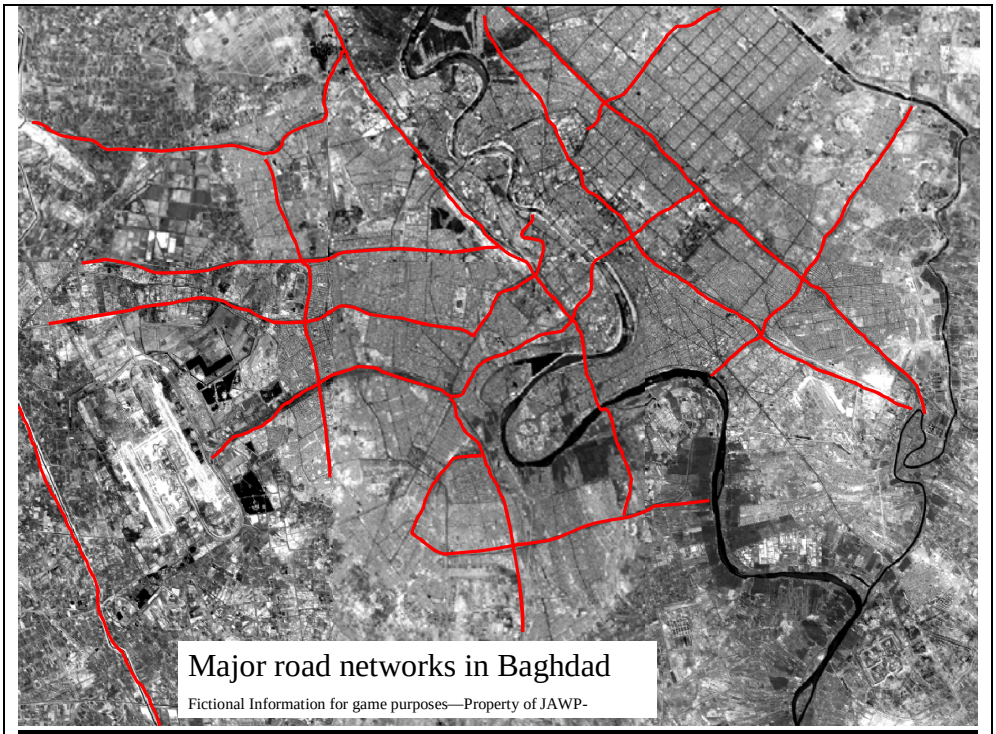
- Current population of the country: 22,427,150
- Current population of the city: 4,834,773
  - The population of the city will increase as red forces collapse into the capital, and displaced personnel identify Baghdad as an escape from advancing blue forces.
- Ethnic breakdown of the city:
  - Shi'a: 2.9M
  - Sunni: 1.5M
  - Christian/other: 150,000
- Population growth: 2.12%
- Unemployment: 12% (governmental data is limited)
- Female/male ratio: 97/100
- Language: predominantly Arabic, except Kurdish occupied regions. Some regions of the city still speak ancient Assyrian and Armenian languages (not at the governmental level or with paramilitary groups).



Urban Terrain Analysis

Above Ground

- Road networks:
  - The roads throughout Baghdad are asphalt and designed for normal commerce to include general automobile traffic.
  - Automobiles are prevalent, however, most are not running due to petrol shortages from the war.
  - Damage created from past wars has generally been repaired, but damage from this campaign is unknown (All bridges from East to West Baghdad were not destroyed). Assume MLC 150 on all bridges (near Central district). Initially designed to support two way transport of HETT plus T-72 tank.
- Buildings:
  - Very few buildings are higher than three floors.
  - Construction is poor, but quite sufficient given the limited availability of modern construction materials. Concrete and wire mesh are the predominate materials used, with no construction codes (concrete in most cases is manmade at site). Cinder blocks are manmade – poor quality.
  - Various designs ensure that different methods of entrance will have to be explored. Wall width, different type of concrete etc
  - The overall strength of any building should be suspect, to include the load bearing capability of roofs (DO NOT land on any building).
  - Buildings usually disintegrate upon being engaged with heavy weapons systems (impacting throughput).



Major road networks in Baghdad

Fictional Information for game purposes—Property of JAWP-

Urban Terrain

Urban Terrain Analysis

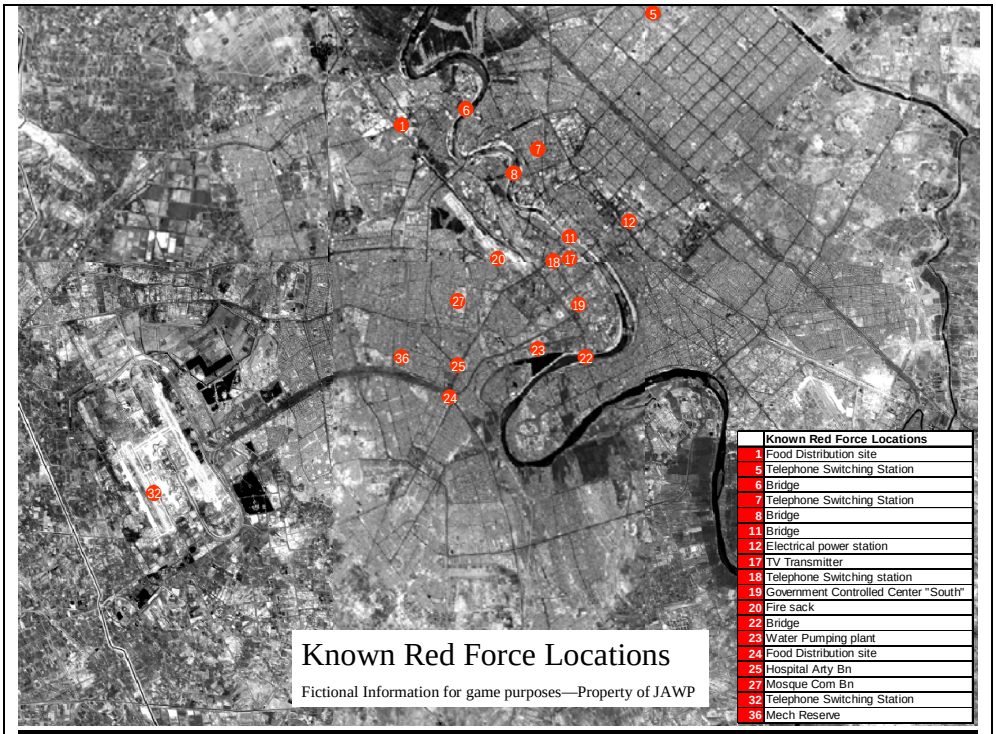
Sub-Surface

- Sewer system:
  - Baghdad's sewer system in the Central District is operational. The sewer system in the outer reaches of the city is in-operational (assume that this is used for limited foot traffic of combatants and non-combatants).
- Subway system:
  - Baghdad began construction on a subway in the mid to late 80's, but construction stopped after the Gulf war. It is unknown how much was accomplished. UN weapons inspectors were told it was filled in due to damage from targeting during the Gulf war. If portions of a subway system exists it is probably located along the west bank of the sacred river near the presidential compound.
- Underground Facilities:
  - It is unknown at this time of any organized underground infrastructure. UN weapon inspectors did not report such facilities, and all known Intel, current HUMIT, and past embassy data does not mention such facilities. The most likely form of sub-surface infrastructure will be in government controlled compounds (building to building) and presidential facilities – most likely hardened bomb proof bunkers designed for long habitability stays by persons of influence – and for command and control operations.

Red Forces Located in Red Capital City

- Estimated - Three Divisions dispersed in city
- Mobile units operating at Company and Battalion levels
- Elements of:
  - Special Republican Guard
  - Regular Red Army (II Corps)
  - Paramilitary/ Irregular forces

- ISR assets have identified known positions for approximately 1/2 of Red Forces



Red Force Capabilities

http://www.globalsecurity.org/military/world/iraq/index.html

Elite Military Forces Special Republican Guard (SRG) "Golden Division"

- Responsible to protect the president and provide military response to any attempt at rebellion or coup. Among other things, security of Baghdad, Palaces, and other vital facilities.
- The only significant military unit allowed in Central Baghdad except intelligence services.
- Largely recruited from Saddam's al-Bu Nasir tribe and tribes closely associated with al-Bu Nasir tribe. Recruited from Tikrit, Baiji, al-Shargat and small towns around Baghdad.
- Paid higher salaries and have priority on basic needs such as food and prescription drugs.
- The Special Republican Guard has combined forces with the Special Security to protect Saddam – forming the Organization of Special Security (OSS)
- The SRG has been the center of dispute between Saddam and UN weapons inspectors throughout the 90's. It is believed that SRG facilities have been the hiding places for Iraq's WMD.
- As of 2002 the SRG is estimated to include 12,000 troops, some armor, air defense and artillery units.

Red Force Capabilities

http://www.globalsecurity.org/military/world/iraq/index.html

<u>Elite Military Forces</u>
(Special Republican Guard)

1st Brigade 180 Officers, 6916 enlisted

- 5 security Battalions
  - First Battalion - Red Leader Motorcade Protection
  - Second Battalion – Foot Patrol Security Forces
  - Fifth Battalion – Personal Bodyguard
  - Seventh Battalion – Civilian clothed Protection Forces
  - Eighth Battalion – Airport Security

- Assigned to protect key facilities and persons
  - 150-200 Mercedes vehicles
  - Motorcycles, squad cars
  - Light Arms

2nd Brigade 102 Officers, 2798 enlisted

- 5 Battalions (1 security, 2 infantry, 1 mechanized, and 1 SOF)
  - Fourth Battalion - Security
  - Sixth Battalion – Combat Infantry
  - Eleventh Battalion – Combat Infantry
  - Fourteenth Battalion – Combat
  - Fifteenth Battalion – Special Forces Combat

- Assigned with defense of key terrain/approached to Baghdad
  - RPG7, Howitzers, BKC's, anti-aircraft guns mounted to vehicles
  - Each soldier carries a Kalishnikov and 120 rounds

Fictional Information
For Wargaming Purposes Only

Photos from : www. Globalsecurity.org, www.mercedez.com

Red Force Capabilities

http://www.globalsecurity.org/military/world/iraq/index.html

3rd Brigade 75 Officers, 2260 Enlisted

- 4 Battalions (1 security, 3 infantry)
- Assigned with defense of key terrain/approached to Baghdad
  - 106mm artillery (8)
  - Mortars: 106mm (8), 82mm (32), 60mm (48)
  - 10 BKC's, RPG7's, RBK's per platoon
  - Anti-aircraft guns, SA-7, 9 missiles
  - 400 Nissan Buses, Hino trucks

4th Brigade (Armored) 47 officers, 705 enlisted

- 2-3 Battalions (T-72)
  - Assigned with defense of key terrain/approached to Baghdad
- Air Defense Command
  - 2 Regiments (4 batteries, 3 batteries) and 3 Independent batteries
  - Assigned with defense of key terrain/approached to Baghdad
- Tank Command (T-72)
  - 2 Tank Regiments

Fictional Information
For Wargaming Purposes Only

Photos from : www. Globalsecurity.org, www.hino.com

Red Force Capabilities

http://www.globalsecurity.org/military/world/iraq/index.html

Secret Police Forces General Security Forces

- The main security body of the state and the oldest in the country.
- Headed by a member of the Tikriti clan.
- Has wide authority concerning political and economic activities defined as crimes, including smuggling and disloyalty or opposition to Saddam's regime.
- Headquartered in Central Baghdad.
- Roughly 8,000 strong.

Secret Police Forces

- Amn Al-Khass
- Mukhabarat
- General Security Service
- Military Security Service

Red Force Capabilities

http://www.globalsecurity.org/military/world/iraq/index.html

Regular Military Forces

- The corps is the operational headquarters for the Red Army.
- Iraq has 5 regular army corps.
- The corps bears the responsibility for administration and logistics as well as combat operations.
- The corps normally controls 3 to 4 x divisions.
- The regular army has three basic types of divisions: armored, mechanized infantry, and infantry. Each division has 3 x maneuver brigades, divisional artillery, and various combat support and combat service support organizations.
- Between 1939 and 1968 the Army was controlled by various governmental organizations. Final control was solidified under the President of Red after the Ba'ath party takeover in 1968.
- The total strength of the Red Army is not exactly known, but it is believed to be roughly 350,000. Since the Gulf war, the Red military has slowly eroded. For example, it is estimated that 40-50 percent of all mechanized/armor assets are non-operational due to chronic maintenance problems created by a lack of parts.

Red Forces Located in Red Capital City

http://www.globalsecurity.org/military/world/iraq/index.html

Regular Military Forces

(Remnants of II Corps only)

- Scattered elements of 3rd Armored, 15th and 34th Infantry Div.
- Expect 8-12 Company size elements distributed to SRGFC Battalion Hq






Red Force Capabilities

http://www.globalsecurity.org/military/world/iraq/index.html

Para-Military/Irregular Forces "People's Army" *Al Jaysh ash Shaabi*

- The peoples army consists of a popular militia composed of civilian volunteers to protect the Ba'ath regime against internal opposition and to serve as a power base to the regular army.
- The peoples army are headquartered in Baghdad with representation in Red's 18 administrative provinces – not provinces controlled by Kurdish forces.
- Each district has one commander with numerous sectors. Each sector has one commander and as many as 10 "bases", each led by a platoon commander. Each base has roughly 10 x squads with 10-15 men each.
- Personnel are assigned to squads based on their residences, to ensure swift mobilization.
- Training is conducted by the regular army to include: physical training, use of arms (mainly small arms), obstacle crossing (focusing on minefield clearing), assaults on enemy positions, searches in mountainous terrain, and some "bases" trained in air assault for use as popular army commandos.
- As part of this force, Saddam has established a group called "Saddam's Cubs" for children between the ages of 5-7. Indoctrination into the Ba'ath party and early exposure to small arms usage is the primary function. Forty percent of Red population is 25 years or younger.

Red Forces Located in Red Capital City

http://www.globalsecurity.org/military/world/iraq/index.html

Para-Military/Irregular Forces

(The Red Popular Army (Jaysh al-Sha'abi)

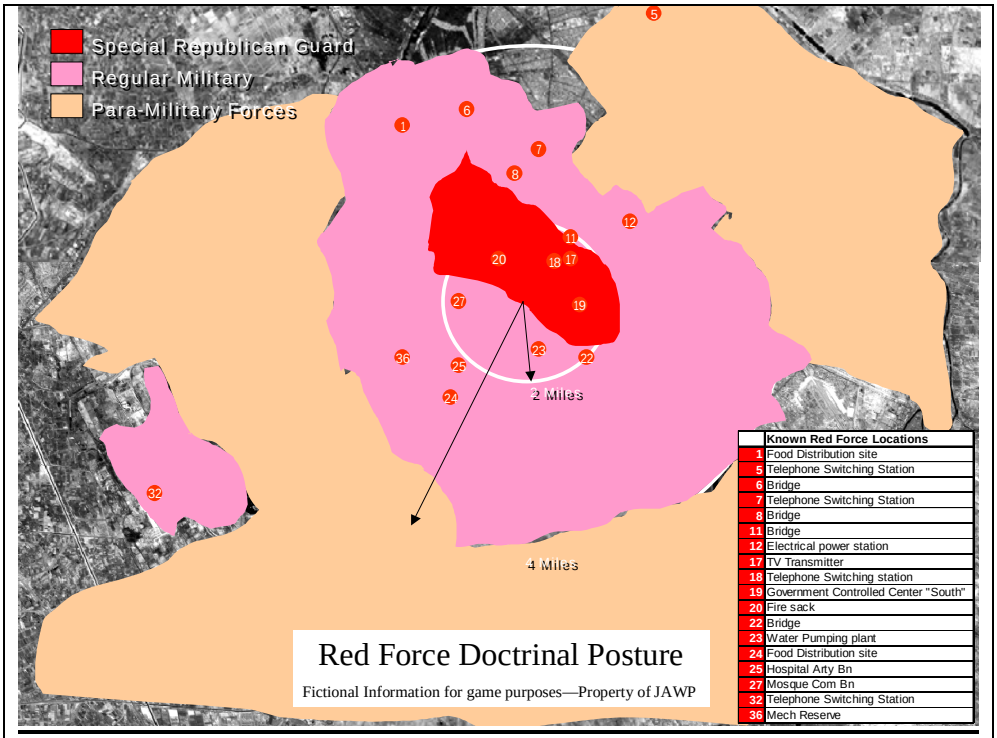
- Popular Army General HQ (Capital District)
- 10 “bases” of 10 X 10-15 man squads each
- Mix of light arms and light ADA
- “Militia”

The Popular Army is organized on an area basis with a total of 19 divisions [also termed Brigades]. Popular Army GHQ in Baghdad controls area HQs located in Baghdad and each of Red 18 administrative provinces (muhafazat, singular -- muhafazah) [in practice, these units do not effectively exist in the three provinces controlled by Kurdish forces]. Each area HQ is commanded by a district commander. Each district controls a number of "sectors" headed by sector commanders. Each sector controls up to 10 "bases," led by platoon commanders.

There are four types of bases: Infantry or combat bases with infantrymen; Command bases with commanders; Close support bases with light mortars and MGs; and Antiaircraft bases, with antiaircraft (AA) guns and MGs. Each base contains up to 10 x squads of from 10 to 15 men. Personnel are assigned to squads based on their residences, to ensure swift mobilization.

Red Force Defensive Doctrine

- Establish a belt defense (co and bn size units)
- Establish layered defense of city approaches (co and bn strong-points with mobile reserve)
- Defend critical nodes (co and bn) in all sectors with the highest priority.
  - If defeated, destroy the “node”: Poison food, burn infrastructure, contaminate water etc.
  - Mix security services with population at designated locations: Using women/children to their advantage in regards to our ROE and international opinion.
- Military logistics will be interspersed with non-combatant substances to include storage and distribution.
- Delay, inflict maximum casualties, and create international support for negotiations and agreement “short” of regime change.



NODES

Key Nodes: There are 16 identified nodes in the city of Baghdad.

• Telephone switching stations: Red has 675,000 telephones (mostly in Baghdad)
  • Coaxial cable (most secure) and microwave radio relay stations.
  • There are (5) operational telephone switching stations in Baghdad: Nodes 4, 5, 7, 18, and 32. Nodes 5, 7, 18, and 32 has known force concentrations
• Water pumping stations: Red has 3 known operational water pumping plants. One of the operational plants functions purely for the presidential compound. The other two support the general populations, and they are severely inadequate.
  • There are (3) operational stations in Baghdad: Nodes 10, 23, and 31. Node 23 has known force concentrations.
• Communication relay stations: Red has two TV and Communications stations supporting an estimated 4.9 million radios and 1.8 million TVs. Most in Baghdad.
  • The two stations are located at nodes 15 and 17.
  • Node 17 is known to have force concentrations.

NODES

Key Nodes "continued"

• Electrical power station: Operational stations (and not in full production) are located at node 12 and 38.

•Bridges: There are (11) bridges that connect East and West Baghdad. Only 1 has been listed as critical node. Node 6. And it is a known force concentration.

	Item Description
1	Food Distribution site
3	Food Distribution site
4	Telephone Switching Station
5	Telephone Switching Station
6	Bridge
7	Telephone Switching Station
8	Bridge
10	Water Pumping plant
11	Bridge
12	Electrical power station
15	Communications Relay station
17	TV Transmitter
18	Telephone Switching station
19	Government Controlled Center "South"
20	Fire sack
21	Food Distribution site
22	Bridge
23	Water Pumping plant
24	Food Distribution site
25	Hospital Arty Bn
27	Mosque Com Bn
31	Water Pumping plant
32	Telephone Switching Station
36	Mech Reserve
38	Electrical power station

Unclassified

Fictional Information
For Wargaming Purposes Only

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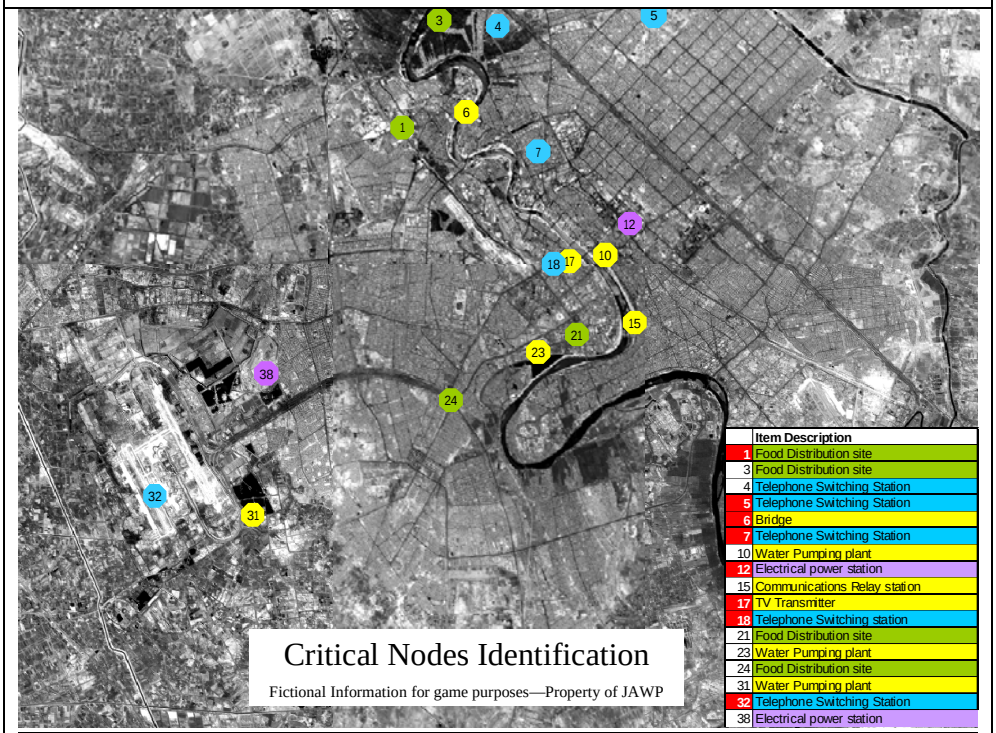
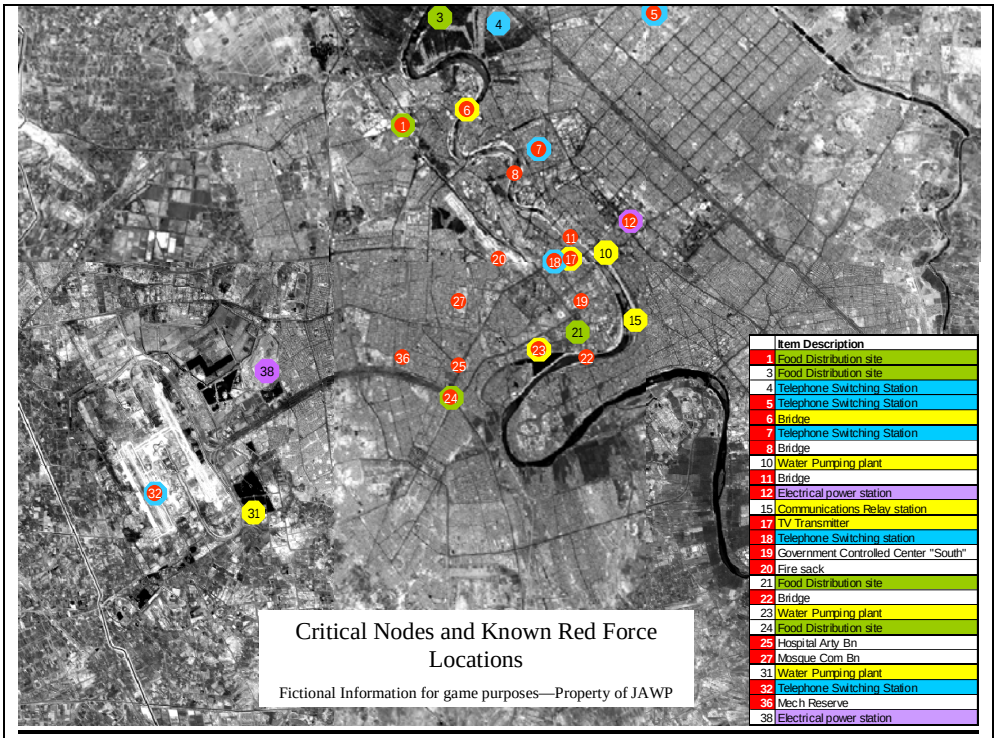


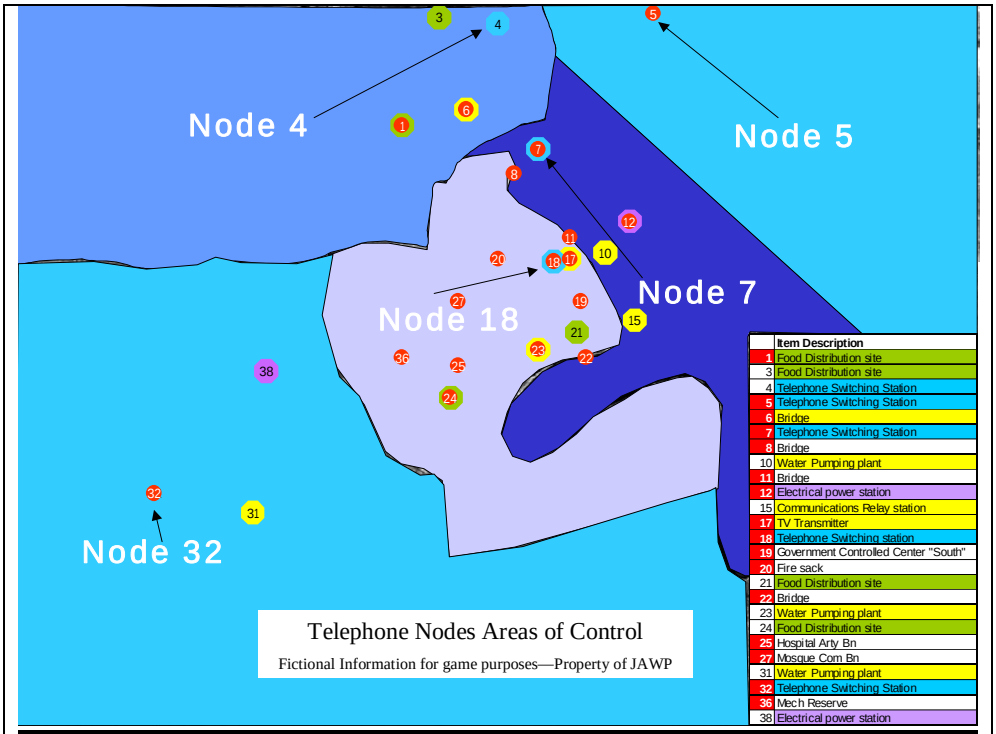
	Item Description
1	Food Distribution site
3	Food Distribution site
4	Telephone Switching Station
5	Telephone Switching Station
6	Bridge
7	Telephone Switching Station
10	Water Pumping plant
12	Electrical power station
15	Communications Relay station
17	TV Transmitter
18	Telephone Switching station
21	Food Distribution site
23	Water Pumping plant
24	Food Distribution site
31	Water Pumping plant
32	Telephone Switching Station
38	Electrical power station



	Item Description
1	Food Distribution site
3	Food Distribution site
4	Telephone Switching Station
5	Telephone Switching Station
6	Bridge
7	Telephone Switching Station
8	Bridge
10	Water Pumping plant
11	Bridge
12	Electrical power station
15	Communications Relay station
17	TV Transmitter
18	Telephone Switching station
19	Government Controlled Center "South"
20	Fire sack
21	Food Distribution site
22	Bridge
23	Water Pumping plant
24	Food Distribution site
25	Hospital Arty Bn
27	Mosque Com Bn
31	Water Pumping plant
32	Telephone Switching Station
36	Mech Reserve
38	Electrical power station

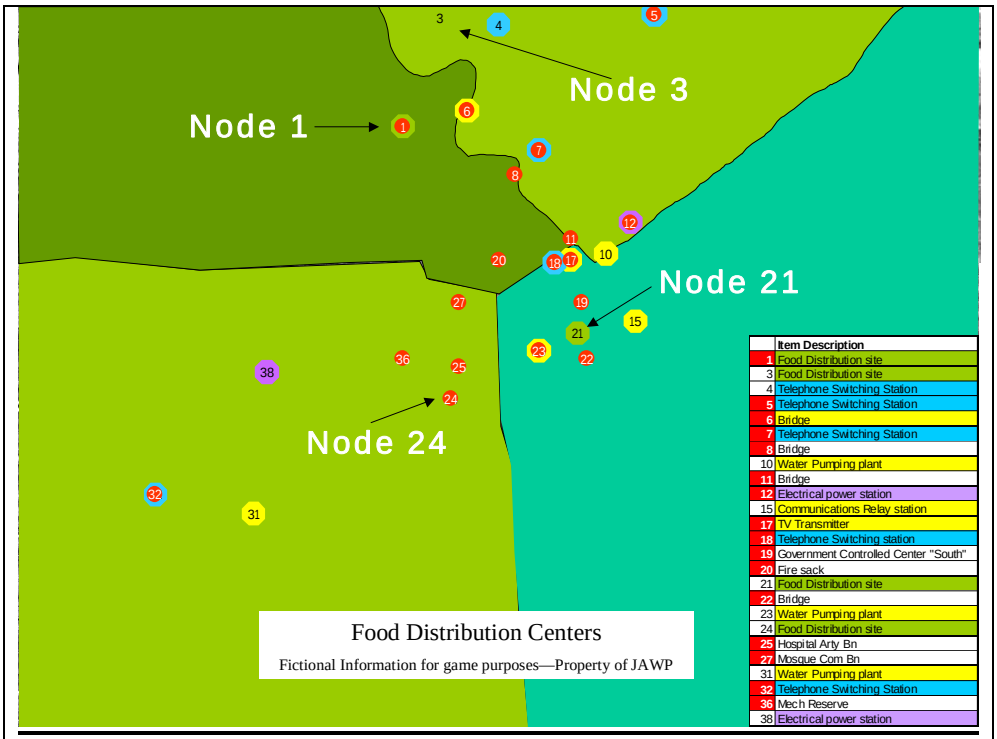
TELEPHONE GRID

- <u>Telephone switching stations</u>: Red has 675,000 telephones (mostly in Baghdad)
  - Coaxial cable (most secure) and microwave radio relay stations.
  - There are (5) operational telephone switching stations in Baghdad: Nodes 4, 5, 7, 18, and 32. Nodes 5, 7, 18, and 32 has known force concentrations
- Each switching station node controls its portion of the grid (see map)
- Physical control allows controller to supply selective service within node
- Kinetic attack or incapacitating non-kinetic attack eliminate service to entire portion of grid until repaired



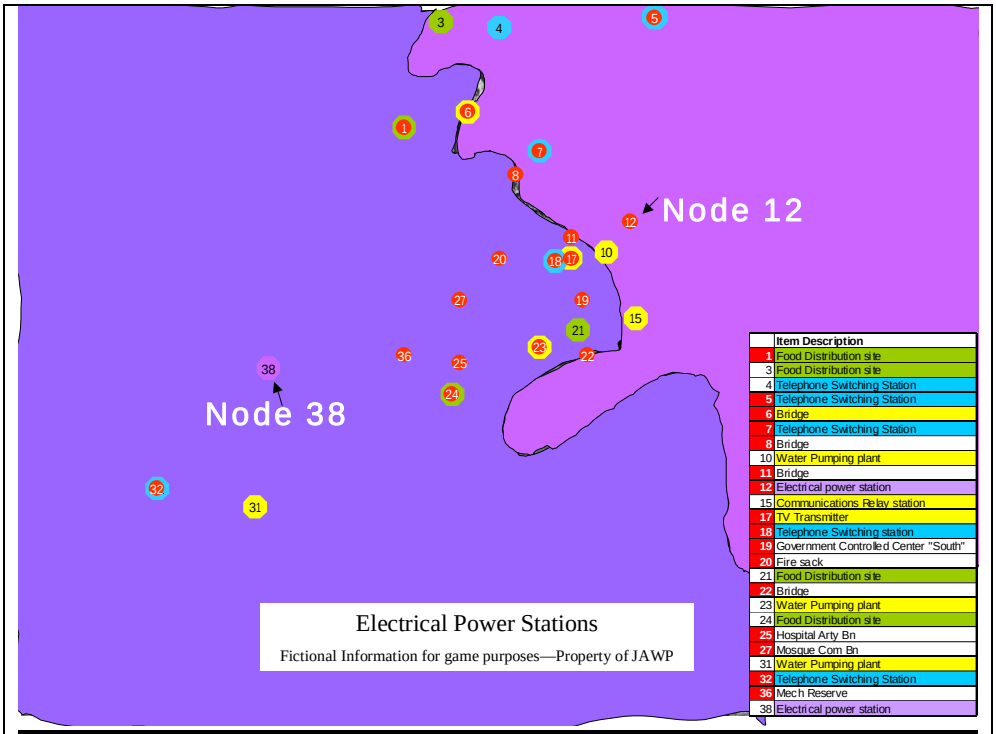
FOOD NODES

- Food Distribution Sites: Red has setup (4) food distribution sites at major road intersections throughout the city. They are nodes 1,3,21, and 24. Node (1) is known to have force concentrations.
- Food nodes are generally considered to be wholesales distribution centers for allocating rations to selected retailers in an emergency. However, they will also be used as direct humanitarian centers for the poorest segments of the population if needed The sectors of the city they service are outlined on the map overlay.



POWER GRID

- Electrical power station: Two operational stations (not in full production) are located at nodes 12 and 38. Is is not known to have force concentrations.
- Each station-node services a grid of the city (see map)
- Physical control allows controller to selectively provide power to city
- Temporary non-kinetic and permanent kinetic attacks take out the entire grid until repaired



TELECOMMUNICATIONS AND WATER NODES

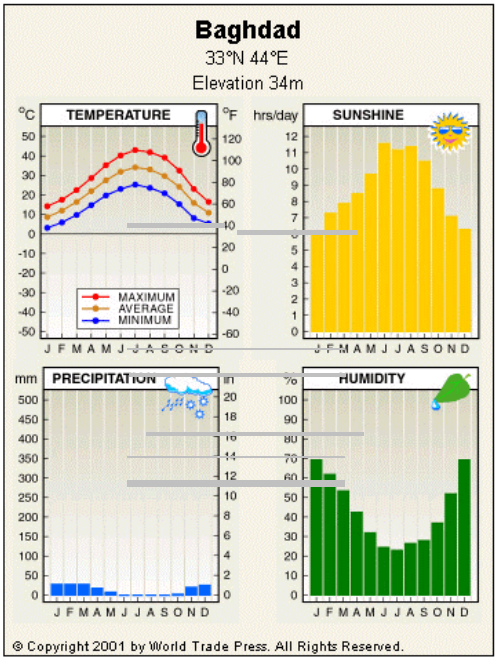
- Water pumping stations: Iraq has 3 known operational water pumping plants. One of the operational plants functions purely for the presidential compound. The other two support the general populations, and they are severely inadequate.
  - There are (3) operational stations in Baghdad: Nodes 10, 23, and 31. Node 23 has known force concentrations.
- Communication relay stations: Red has two TV and Communications stations supporting an estimated 4.9 million radios and 1.8 million TVs. Most in Baghdad.
  - The two stations are located at nodes 15 and 17.
  - Node 17 is known to have force concentrations.
- These are analog and are city wide
- Physical control allows controller to service entire city. Selective service is not an option
- If a node is destroyed or incapacitated, service is lost to entire city

SPECIAL CITIZENS SECURITY PROGRAM

- Special citizens placed in abandoned government buildings to protect them from general population suspicion that they side with blue
- Special citizens include:
  - Kurd and Shiite leaders
  - Known dissidents
  - Jews

Special Citizens (cont.)

- Compounds guarded by special security units at a safe distance from potential Blue kinetic strikes
- Actions taken to portray normal government activity within facilities
- Blue strikes on facilities will be immediately reported to world press for graphic coverage



Mission Analysis

PROCESS

- Identify Higher Headquarters Commanders intent
- Identify purpose of the operation
- Identify Tasks
- Analysis COG
- Begin development of staff estimates
- Review available assets and identify resource shortfalls
- Determine restraints/constraints
- Determine recommended CCIR's
- Identify requests for information
- Determine assumptions
- Draft mission statement
- Mission analysis brief

OUPUTS

- Specified Tasks
- Essential Tasks
- Warning order (not required)
- Restraints/constraints
- Assumptions
- Shortfalls
- COG analysis
- Approved CCIR's
- Requests for info
- Staff estimates

Course of Action Development

- Commander's Planning Guidance
- What forms of maneuver will you use
  - Primary concept
  - Supporting concepts
- Type of attack
- Designation of main effort
- Requirement for supporting efforts
- Scheme of maneuver
- Sequential and simultaneous operations
- Sequencing essential task accomplishment
- Task organization
- Use of reserves
- Rules of engagement
- Risk Assessment

Urban Capabilities within USECT Framework

- **Understand** [Strategic Setting/Physical Battlespace/Population/Forces]
  - What elements were critical to understand while developing your plan?
  - What knowledge was lacking?
  - How did your understanding influence your choice of approaches?

- **Shape** [Strategic Setting/Physical Battlespace/Population/Forces]
  - What elements were critical to shape the battlefield
  - How did the application of the methods shape the battlefield?
  - What else was needed to shape the battlespace?

- **Engage** [Weapon Delivery/Weapon Effects/Information Ops/PSYOP]
  - What made your selected targets important?
  - What concept(s) did you choose, and why?
  - What concept(s) did you not choose and why?
  - What were the expected results?
  - What was the expected enemy reaction?
  - What was your counter-action?
  - What was the defeat mechanism you envisioned?

Wargame II ROE

The Wargame (Mon – Wed)

- If the answer is not in the gamebook – see White Cell (Bean/Hurley/Woods)
- Clearly state your principle ***Operational Approach*** *(select 1 of 6).*
- Teams may employ any method described in the 6 approaches – however your defeat mechanism must be clearly linked to a stated operational approach.
    - For Example:
      Operational Approach : *Precision Attack*
      Method: East of river apply *Precision Attack* method
      West of the river we are *segmenting* and *isolating* parts of the city to shape the city operational approach
      Endstate: Debilitating psychological effects (defeat mechanism) of *Precision Attack*
- Use established planning process to the extent practical (will facilitate later discussion)
- Document concept decisions as you develop COAs (will help capture strengths and weaknesses)

Wargame II ROE

The Analysis (Thur)

- Use provided format as the "minimum guide" for conducting analysis
- Use references (e.g. doctrine, roadmap, concept paper) where practical (documentation will aid writing team)
- Think about "next-steps" – be creative

The Out Brief (Fri)

- Use format as guide
- Graphics not required
- Stimulate discussion

Wargame II Output Format

Explain what happened

- Operational design selected
- Major operational level tasks (USECT)
- Battle synopsis

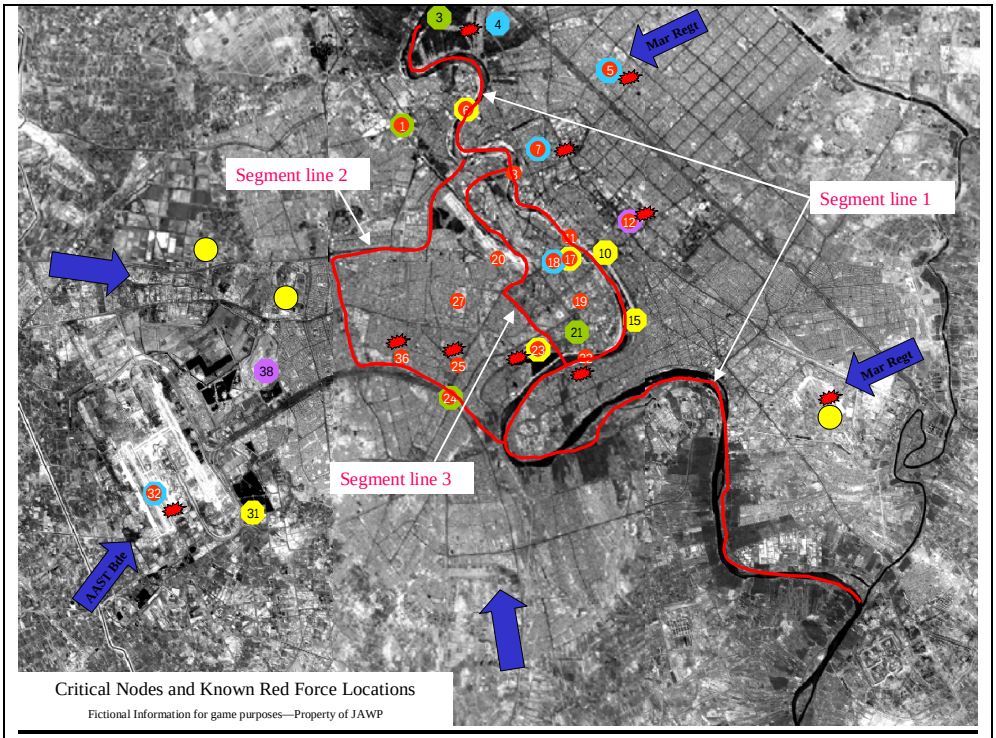
Explain why you think it happened

- Strengths (concept / approach)
- Weaknesses (concept / approach)
- Overall Conclusions

Wargame II Output Format

Explain next steps

- Capabilities Required
    - Capability - “the capacity of a properly organized, trained, and equipped force to accomplish a doctrinal mission function, or task”
    - Critical elements of a capability described as DOTMLPF
- Recommendations
    - Relative to concepts
    - Relative to overarching approach
    - Relative to *future* JAWP wargaming



Critical Nodes and Known Red Force Locations

Fictional Information for game purposes—Property of JAWP

Appendix B. Six Operational Concepts

The *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations* described five "new" operational concepts for urban operations that differed from those used historically by US forces.[1] The original descriptions of those concepts in the *Roadmap* were rather brief (one paragraph each). In preparation for the war games, a member of the JAWP urban operations team, Colonel Mark Bean (USMC), prepared more extensive descriptions of those concepts specifically for the games. These longer descriptions were given out to the participants for their reference.

This appendix includes these more extensive descriptions of the five concepts, with some minor changes in structure from the *Roadmap*. There are six concepts described here because *Nodal Capture* was added as a variant of the *Nodal Capture and Expansion* concept. So that each concept could be understood in a stand-alone fashion, a significant amount of information is repeated in each description. In addition, some changes were made in the format of the original handout for participants to enhance readability.

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[1] See pages II-3 to II-4 in volume II of the *Department of Defense Roadmap for Improving Capabilities for Joint Urban Operations*.

Contents

Illustrations

B.1 How the JTF Employs a Nodal Capture and Expansion Approach to Defeat an Adversary in a City

Nodal Capture and Expansion is an approach that leverages control of critical nodes in the city to facilitate the capture of the rest of the city. It requires knowing which nodes are critical, how they interact, and a thorough understanding of the adversary's defensive plan.

Once the key nodes are identified, the joint task force (JTF) conducts operations to rapidly capture them and subsequently support the occupying ground forces. Once the JTF establishes firm control of these critical nodes, ground forces expand out from these bridgeheads to finish off a weakened adversary. Isolating the city from (or controlling) outside sources of supply and reinforcement is a key requirement. For a depiction of this concept, see Figure 1 on page 15.

B.1.1 Movement and Maneuver

A JTF using *Nodal Capture and Expansion* to control a city operates as part of a larger joint force. As a result, many of the tasks associated with operational movement are fulfilled by the larger joint operation infrastructure. Examples of such tasks include the following:

- strategic deployment,
- Joint RSOI (Reception, Staging, Onward-movement & Integration), and
- coordinating host nation support .

Indeed the overall JFC makes efforts to reduce the JTF workload as much as possible so he can focus on the urban operation at hand. Likewise, considerations like airspace management, air and maritime superiority, and isolating the Joint Operations Area (JOA) are out of the hands of an urban JTF commander. A major urban operation is likely to be the JFC's main effort and the JTF commander's task is to define and articulate requirements for supporting organizations.

Seeking to wrest control of a city from an adversary is an operational-level offensive operation. As such, the JTF commander is concerned with intra-theater deployment and redeployment so as to position sufficient forces to achieve the timings and effects required of a *Nodal Capture and Expansion* operation. Additionally, assembling, posturing, and transitioning forces so as to produce the key effects of occupying and taking custody of hostile forces, equipment, and personnel within critical areas in a city and then attacking from those areas to complete the defeat of the adversary are vitally important activities for the JTF commander and his staff. In developing a concept of operations along the lines of *Nodal Capture and Expansion*, the JTF commander first views the city as a system of systems to be controlled as a basis for subsequent decisive offensive operations. Timings, effects, and sequencing of JTF activities are crafted to produce the key desired effect of capturing critical sources of support and transforming them into support bases for follow-on attacks. in order to fully exploit the debilitating effects of *Nodal Capture and Expansion* at the city-scale, key systems are addressed in a sequence and with timings that produce maximum dislocation. *Nodal Capture and Expansion* begins to win the moment the adversary commander realizes he has not only lost key support infrastructure but that his forces are under attack from multiple locations within the city.

The JTF commander employs the full range of activities to achieve city-wide positional, tempo, strength, morale, or time-competitive OODA[2] cycle advantages over the adversary. Examples of such activities include the following:

- airborne and/or air assaults
- assaults
- demonstrations
- penetrations
- raids
- shows of force
- unconventional and special operations

Key to success in *Nodal Capture and Expansion* is three activities in particular:

- overcoming operationally significant barriers and obstacles,
- enhancing the movement of JTF forces, and
- imposing devastating counter-mobility.

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2 John Boyd's decision loop of Observe – Orient – Decide – Act.

B.1.2 ISR

In addition to producing a standard Joint IPB (Intelligence Preparation of the Battlefield) for its target city, JTFs conducting *Nodal Capture and Expansion* operations apply organic resources and request outside support specifically to identify the key (structural and non-structural) nodes and obtain a detailed understanding of the adversary's defensive plan. This effort requires a continuously refreshed understanding of the complicated and, more often, complex adaptive military, cultural, political, historical, demographic, economic, and geographic systems in play in the city. Although obtaining complete knowledge is not possible, the probability of success is directly proportional to how well the JTF performs the following tasks:

- correctly identifies the key nodes,
- continually understands the city at least as well and preferably better than its inhabitants, and
- anticipates the reactions and potential work-arounds its defenders might employ.

To achieve these objectives, the JTF employs the full range of technical capability, multi-source information and intelligence fusion, and rapid analysis and dissemination. Employment of air and space sensors, human intelligence, imagery intelligence, signals intelligence, open-source intelligence, measurement and signature intelligence, and counterintelligence are all considered.

JTF ISR addresses noncombatants, whose presence in the urban area will be substantial and dynamic. Because the JTF plan to achieve advantage on the adversary through *Nodal Capture and Expansion* includes activities to either neutralize or exploit the non-combatant population, Determining the ethnic and religious composition of the population and, if possible, their intent (flee/remain, support/resist) is crucial.

B.1.3 Firepower

In conducting *Nodal Capture and Expansion*, JTFs are able to target and attack operational, high payoff, and high-value target sets to support the capture and defense of critical nodes as well as the subsequent multi-pronged offensives that will be launched from them.

In order to accomplish this, the JTF establishes persistent surveillance and target acquisition over the city and deploys sufficient joint firepower assets to support and protect attacking JTF ground forces, and to defeat adversary counterattacks. Key components of the JTF plan are the following:

- employment of Psychological Operations (PSYOPs),
- electronic,
- informational attacks, and
- non-lethal attacks on personnel, equipment, and installations..

Air, surface, sub-surface, and special operations means deny use of routes and approaches; and prevent, hinder, or delay the use of key areas in order to dislocate the adversary's key support systems. Joint firepower also supports achieving citywide positional, tempo, strength, morale, or time-competitive OODA cycle advantages (operational maneuver) over the adversary.

B.1.4 Logistics and Personnel Support

A JTF using *Nodal Capture and Expansion* to control a city will be operating as part of a larger joint force. As a result, many of the tasks associated with logistics and personnel support are fulfilled by the larger joint and component logistics infrastructure. This includes the supply of arms, munitions, equipment, fuel, maintenance, as well as the full range of force support functions. A major urban operation will likely be the JFC's main effort and the JTF commander's task is to define and articulate requirements for supporting organizations.

The JTF commander ensures robust support and services especially for ground forces committed into the city by establishing secure forward operating bases. These safe havens provide the full range of field, personnel, and health services; and facilitate the flow of casualties, training, rehearsal, and reconstitution. JTF ground forces conducting *Nodal Capture and Expansion* are robust, lethal forces that are initially dispersed among the identified key nodes. This approach requires not only secure forward operating bases but also reliable lines of communication.

In the initial phases of *Nodal Capture and Expansion*, JTF forces are vulnerable to being cutoff from sources of support. As the operation progresses and

the adversary begins to feel the effects of having lost key sources of support, the ability of the adversary to interdict JTF combat service support will be degraded. This advantage will be offset by the increased JTF requirement to flow forces, material, and supplies into captured nodes to support follow-on offensive actions. JTF ground forces operating from captured key nodes will require significant mobility, counter-mobility, and survivability assets.

A JTF commander using *Nodal Capture and Expansion* to control a city is prepared to exploit success in all phases to conduct simultaneous consolidation and transition operations. Early re-introduction of civil support and services not only facilitates JTF control of the city but also undermines the morale and credibility of the adversary. The JTF commander has forces on standby to implement the JTF stability and support plan in potentially widely separated areas of the city as soon as they become available. Activities include the following:

- civil affairs
- civil-military operations
- coordination of political-military support
- disaster control
- foreign internal defense
- law enforcement
- prisoner control
- real estate management
- security assistance
- support to agencies
- transition to civil administration

B.1.5 Command and Control

As with the other functional areas already discussed, a JTF that uses *Nodal Capture and Expansion* to control a city is operating under the C4 policies[3], procedures, and infrastructure established and managed for the overall JOA. Within his AO, the JTF commander establishes robust and redundant capabilities to perform the following:

- acquire and communicate operational-level information;
- maintain status; and
- assess the operational situation.

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[3] Command, control, communications, and computers.

In addition to understanding the local city situation, the JTF commander also looks "out and up" to ensure his activities remain relevant to shifting theater and strategic goals, and national policy.

In addition to ensuring a reasonable capability to acquire and process information, the JTF commander also organizes his forces so that they are able to accomplish missions with less information. Decision thresholds and resources are pushed to the lowest levels, and the JTF commander accepts that he will often not know as much about local conditions as his tactical commanders will.

The JTF commander develops, approves, and issues plans and orders describing the timings, effects, and sequencing of JTF activities designed to capture the critical sources of support in the city, deny them to the adversary, and employ them as bases for decisive offensive operations. Because of the density of non-combatants and protected infrastructure within the city, the JTF Rules of Engagement (ROE) are carefully crafted to ensure the success of tactical activities and force protection without betraying the larger operational, strategic, and national policy interests. Because successful *Nodal Capture and Expansion* achieves control of the city with fewer casualties and less infrastructure damage than traditional approaches, JTF operations are less likely to produce unintended negative consequences.

The JTF commander establishes, organizes, and operates his headquarters from one of the secure forward operating bases in his AO. A location is chosen that balances force protection and security, with effectiveness.

In conducting *Nodal Capture and Expansion*, the JTFs are able to integrate and control operational information operations. This gives the JTFs the following capabilities:

- the capability to enhance the dislocating effect produced on the adversary (particularly the adversary's senior decision makers), and
- the capability to either neutralize or exploit the non-combatant population.

Information Operations support the effort for the following reasons:

- to psychologically separate the adversary from identified critical sources of support, and

- to convince the adversary commanders they are under attack from multiple directions and can neither expel JTF occupying forces nor craft "work-around" solutions to replace the loss of key support infrastructure.

JTF Information Operations also supports these activities to accomplish the following:

- to achieve city-wide advantages over an adversary, and
- to introduce operationally significant obstacles on a city-wide scale to paralyze an adversary's infrastructure.

As opportunities to implement consolidation and transition plans appear even in the early phases of *Nodal Capture and Expansion* operations, the JTF's ability to coordinate and integrate joint, multi-national, and interagency support is especially important.

Even before the dislocating effect of *Nodal Capture and Expansion* is felt across the city-wide systems, adversary forces will begin to lose their grip on the population and on agencies that provide civil services and support. In addition, long before the city is under the full control of friendly forces, there will be opportunities and requirements to permit exterior support and services to enter and assist the non-combatant population. In addition to assigning tasks to forces, the JTF commander exploits this loss of adversary control on population services, and support by performing the following tasks:

- understanding national, multi-national, agency, and non-governmental agendas;
- coordinating with non-DoD, host nation, and coalition support; and
- introducing a relevant community relations program.

The ability to manage media relations so as to accurately portray the JTF's intentions is critical throughout *Nodal Capture and Expansion* operations. Nodal capture and expansion does not "look" like traditional urban operations and activities sometimes go astray of policy—the JTF commander is prepared to truthfully explain these things.

Additionally, the JTF coordinates a robust command and/or internal information program designed to ensure personnel, especially those operating in the city or coming in contact with the non-combatant population, are fully armed with the JTF ROE, the purpose of the operation (why we are here), and commander's intent for the current activities..

B.1.6 Force Protection

A JTF using *Nodal Capture and Expansion* to control a city operates as part of a larger joint force and is protected by the established theater air, space, and missile defense. Because the JTF relies heavily on remotely delivered fires to support *Nodal Capture and Expansion*, it crafts both positive and procedural control measures that facilitate persistent surveillance and target acquisition over the city and employment of sufficient joint firepower assets to defeat adversary forces defending key nodes, counterattacking JTF ground forces, or defending against subsequent decisive attacks.

Because of the density of the urban environment, JTF forces, especially those operating on the ground and in the air over the city, will be especially vulnerable. The JTF commander plans for personnel recovery; joint search and rescue; and counters adversary deception and psychological operations. JTF ground forces sent into the city have strong countermine and mobility capabilities.

Striking an acceptable balance between protection for friendly forces, mission accomplishment, and risk to non-combatants is especially difficult within the close confines of the city. The JTF commander prepares (operationally significant) defenses and removes hazards (e.g., pollution and HAZMAT) for operational forces, their means, and non-combatants. Protecting the forward operating bases supporting *Nodal Capture and Expansion* operations will be especially important. Providing counter-reconnaissance, and security of flanks, rear areas, critical facilities, systems, and LOCs may consume as many JTF forces as does the primary effort to capture and expand from key nodes in the city.

In conducting *Nodal Capture and Expansion*, JTF forces may intentionally conduct non-combatant evacuations or be forced to by unforeseen events. The JTF commander anticipates the effects of operations on the non-combatant population and employs evacuation in cases in which it is feasible and contributes to separating adversary forces from their accustomed sources of

strength—and establishing JTF forces in firm control of positions from which they can attack. Because of the massive support requirements, large-scale non-combatant evacuations are generally not considered feasible.

The JTF commander conducts operational deception to perform the following tasks:

- support the rapid capture of key sources of support in the city,
- hide the JTF intentions to not merely defend from those sites but to use them as bases for multiple attacks,
- encourage the adversary to reveal and expose critical nodes,
- compound the psychologically debilitating effect of being separation from accustomed sources of strength, and
- encourage ill-timed counterattacks that make him vulnerable to JTF decisive operations.

B.1.7 Counter CBRNE Weapons

While the JTF falls under the overall theater effort to neutralize adversary CBRNE weapons[4], no other threat capability has the same potential to disrupt a *Nodal Capture and Expansion* approach to controlling a city. Indeed, adversary CBRNE systems represent critical nodes that receive high priority in the capture effort. The JTF commander integrates the CBRNE weapons situation into his JISR (joint intelligence, surveillance, and reconnaissance) and includes information on CBRNE weapon-delivery systems, toxic industrial materials, adversary intent, and possible courses of action.

The density of the city makes it an ideal place to produce, store, deliver, and employ CBRNE weapons. If JTF *Nodal Capture and Expansion* operations are successful, they will deny control of a key urban area to the adversary with dire operational and strategic consequences. Losing a key city may be so devastating a proposition to senior adversary decision makers that they may employ chemical, biological, radiological, nuclear, or high-yield explosives to prevent it. This is especially so the more important the city (e.g., a capital).

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[4] Chemical, biological, radiological, nuclear, and explosives.

The JTF commander understands that one of the unintended consequences of causing rapid adversary dislocation, loss of control, and disorientation is that they might resort to CBRNE weapons in a last-ditch effort to stave off disaster.

The JTF commander coordinates with theater plans to prevent the adversary from employing CBRNE weapons and, if prevention fails, to locate hazards, take necessary protective actions, and decontaminate as necessary. Activities such as post-hostility remediation, preparing equipment for redeployment and final disposal *in situ*, or removal of an adversary's residual CBRNE weapon capability are also included. Specifically, a JTF conducting using *Nodal Capture and Expansion* to control a city coordinates conventional and unconventional CBRNE counterforce operations into its plan to isolate sources of support. Production, infrastructure, and delivery systems are targeted for both lethal and non-lethal means. The JTF commander implements active and passive CBRNE defense measures for his forces, means, critical nodes, facilities, and rear areas.

Finally, as part of his consolidation and transition plan, the JTF commander coordinates support for interagency essential services and activities required to manage and mitigate damage resulting from the employment of CBRNE weapons or release of toxic industrial materials and/or contaminants. Services and activities can include:

- population evacuation
- decontamination
- transportation
- communications
- public works and engineering
- fire fighting
- information and planning
- mass care
- resource support
- health and medical services
- urban search and rescue (SAR)
- hazardous materials
- food and energy

The JTF is prepared to execute CBRNE consequence management activities at any time during operations.

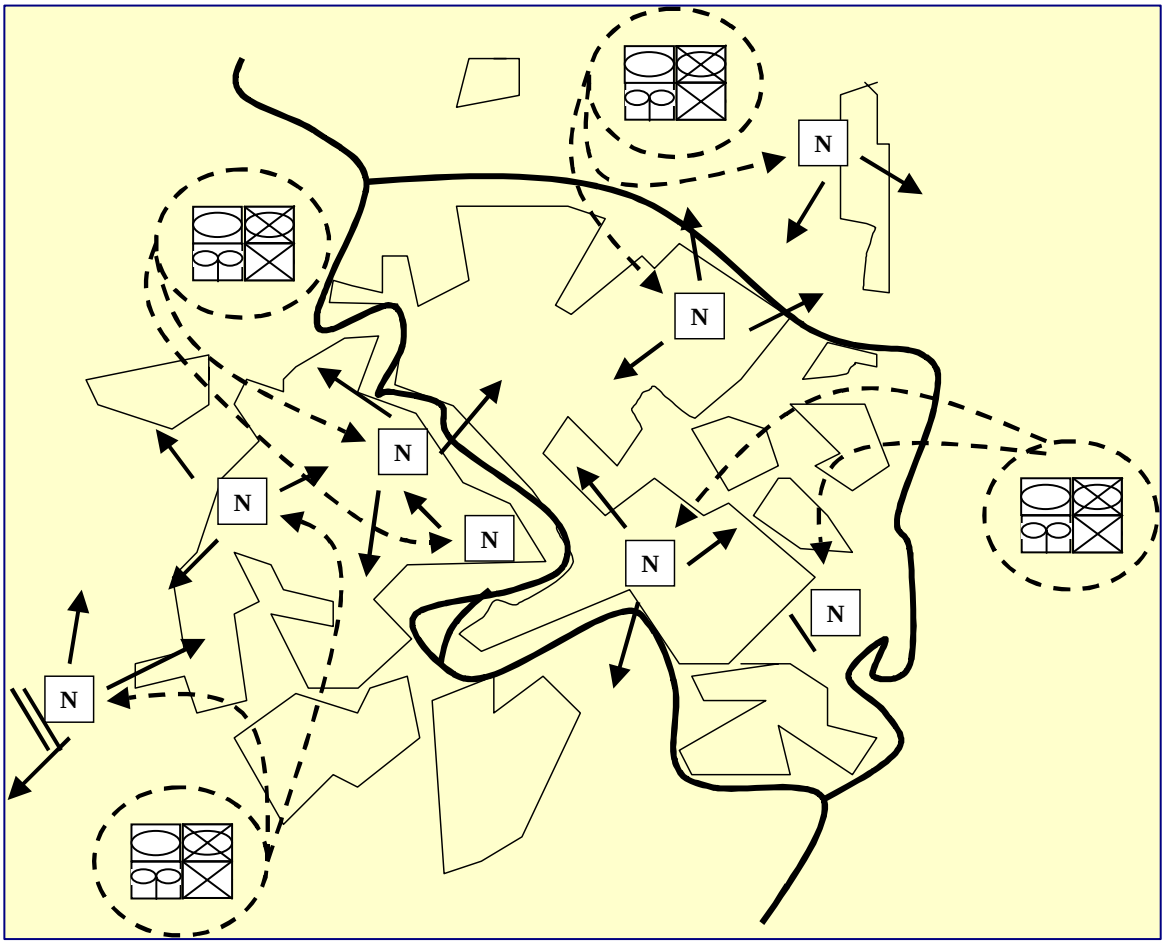


Figure 1. Nodal Capture and Expansion

B.2 How the JTF Employs a Nodal Capture Approach to Defeat an Adversary in a City

Nodal Capture is an approach that leverages control of critical (structural and non-structural) nodes in the city to order to deny the adversary sources of support and freedom of movement, and to prevent contact between adversary forces. This approach exploits the psychologically debilitating effects produced when forces are separated from their accustomed sources of strength. It requires knowing which nodes are critical, how they interact, and a thorough understanding of the adversary's defensive plan. Once the key nodes are identified, the JTF conducts operations to rapidly capture them and subsequently support the occupying ground forces. Isolating the city from (or controlling) outside sources of supply and reinforcement is a key requirement. For a depiction of this concept, see Figure 2 on page 25.

B.2.1 Movement and Maneuver

A JTF using *Nodal Capture* to control a city operates as part of a larger joint force. As a result, many of the tasks associated with operational movement are fulfilled by the larger joint operation infrastructure. Examples include the following:

- strategic deployment,
- Joint RSOI, and
- coordinating host nation support.

Indeed, the overall JFC makes efforts to reduce the JTF workload as much as possible so he can focus on the urban operation at hand. Likewise, considerations like airspace management, air and maritime superiority, and isolating the JOA are out of the hands of an urban JTF commander. A major urban operation is likely to be the JFC's main effort and the JTF commander's task is to define and articulate requirements for supporting organizations.

Seeking to wrest control of a city from an adversary is an operational-level offensive operation. As such, the JTF commander is concerned with intra--

theater deployment and redeployment so as to position sufficient forces to achieve the timings and effects required of a nodal capture operation. Additionally, assembling, posturing, and transitioning forces so as to produce the key effects of occupying and taking custody of hostile forces, equipment, and personnel within critical areas in a city are vitally important activities for the JTF commander and his staff.

In developing a concept of operations along the lines of *Nodal Capture*, the JTF commander first views the city as a *system of systems* to be controlled as a basis for subsequent decisive offensive operations. Timings, effects, and sequencing of JTF activities are crafted to produce the key desired effect of capturing critical sources of support. In order to fully exploit the debilitating effects of *Nodal Capture* at the city-scale, key systems are addressed in a sequence and with timings that produce maximum dislocation. *Nodal Capture* begins to win the moment the adversary commander realizes he has lost critical support infrastructure and that JTF forces have occupied and are successfully defending key locations across the city.

The JTF commander employs the full range of activities to achieve city-wide positional, tempo, strength, morale, or time-competitive OODA cycle advantages over the adversary. Examples of such activities include the following:

- airborne/air assaults
- assaults
- demonstrations
- penetrations
- raids
- shows of force
- unconventional and special operations

Key to success in *Nodal Capture* is three activities in particular:

- overcoming operationally significant barriers and obstacles,
- enhancing the movement of JTF forces, and
- imposing devastating counter-mobility.

B.2.2 ISR

In addition to producing a standard Joint IPB for its target city, JTFs conducting *Nodal Capture* operations apply organic resources and request outside support specifically to identify the key (structural and non-structural) nodes and obtain a detailed understanding of the adversary's defensive plan. This

effort requires a continuously refreshed understanding of the complicated and, more often, complex adaptive military, cultural, political, historical, demographic, economic, and geographic systems in play in the city. Although obtaining complete knowledge is not possible, the probability of success is directly proportional to how well the JTF performs the following tasks:

- correctly identifies the key nodes,
- continually understands the city at least as well and preferably better than its inhabitants, and
- anticipates the reactions and potential work-arounds its defenders might employ.

To achieve these objectives, the JTF employs the full range of technical capability, multi-source information and intelligence fusion, and rapid analysis and dissemination. Employment of air and space sensors, human intelligence, imagery intelligence, signals intelligence, open-source intelligence, measurement and signature intelligence, and counterintelligence are all considered.

JTF ISR addresses non-combatants whose presence in the urban area will be substantial and dynamic. Because the JTF plan to achieve advantage over the adversary through *Nodal Capture* includes activities to either neutralize or exploit the non-combatant population. Therefore determining the ethnic and religious composition of the population and, if possible, their intent (flee/remain, support/resist) is crucial.

B.2.3 Firepower

In conducting *Nodal Capture*, the JTFs are able to target and attack operational, high pay-off, and high-value target sets to support the capture and defense of critical nodes.

To accomplish this, the JTF establishes persistent surveillance and target acquisition over the city and deploys sufficient joint firepower assets to support and protect attacking JTF ground forces, and defeat adversary counterattacks. Key components of the JTF plan are employment of PSYOPs, electronic, and informational attacks, and non-lethal attacks on personnel, equipment, and installations.

Air, surface, sub-surface, and special operations means deny use of routes and approaches; and prevent, hinder, or delay the use of key areas to dislocate the adversary's key support systems. Joint firepower also supports achieving city-wide positional, tempo, strength, morale, or time-competitive OODA cycle advantages (operational maneuver) over the adversary.

B.2.4 Logistics and Personnel Support

A JTF using *Nodal Capture* to control a city will be operating as part of a larger joint force. As a result, many of the tasks associated with logistics and personnel support are fulfilled by the larger joint and component logistics infrastructure. This includes the supply of arms, munitions, equipment, fuel, maintenance, as well as the full range of force support functions. A major urban operation will likely be the JFC's main effort and the JTF commander's task is to define and articulate requirements for supporting organizations.

The JTF commander ensures robust support and services especially for ground forces committed into the city by establishing *secure forward operating bases*. These safe havens provide the full range of field, personnel, and health services; and facilitate the flow of casualties, training, rehearsal, and reconstitution. JTF ground forces conducting nodal capture are robust, lethal forces that are dispersed among the identified key nodes. This approach requires not only secure forward operating bases but also reliable lines of communication.

In the initial phases of nodal capture, JTF forces are vulnerable to being cut-off from sources of support. As the operation progresses and the adversary begins to feel the effects of having lost key sources of support, the ability of the adversary to interdict JTF combat service support will be degraded. JTF ground forces operating to capture and defend key nodes will require significant mobility, counter-mobility, and survivability assets.

A JTF commander using *Nodal Capture* to control a city is prepared to exploit success in all phases to conduct simultaneous consolidation and transition operations. Early re-introduction of civil support and services not only facilitates JTF control of the city but also undermines the morale and credibility of the adversary. The JTF commander has forces on standby to implement the JTF stability and support plan in potentially widely separated areas of the city as soon as they become available. Activities include the following:

- civil affairs
- civil-military operations
- coordination of political-military support
- disaster control
- foreign internal defense
- law enforcement
- prisoner control
- real estate management
- security assistance
- support to agencies
- transition to civil administration

B.2.5 Command and Control

As with the other functional areas already discussed, a JTF using *Nodal Capture* to control a city operates under the C4 policies, procedures, and infrastructure established and managed for the overall JOA.

Within his AO, the JTF commander establishes robust and redundant capabilities to perform the following:

- Seek to continually refresh the view of the effects his operations are causing on JTF forces, the adversary, the non-combatant population, and the other systems in play in the city (CCIRs – commander's critical information requirements);
- acquire and communicate operational-level information ;
- maintain status; and
- assess the operational situation.

In addition to understanding the local city situation, the JTF commander also looks "out and up" to ensure his activities remain relevant to shifting theater and strategic goals, and national policy.

In addition to ensuring a reasonable capability to acquire and process information, the JTF commander also organizes his forces so that they are able to accomplish missions with less information. Decision thresholds and resources are pushed to the lowest levels, and the JTF commander accepts that he will often not know as much about local conditions as his tactical commanders will.

The JTF commander develops, approves, and issues plans and orders describing the timings, effects, and sequencing of JTF activities designed to capture the critical sources of support in the city and deny them to the adversary. Because of the density of non-combatants and protected infrastructure within the city, the JTF Rules of Engagement (ROE) are carefully crafted to ensure the success of tactical activities and force protection without betraying the larger operational, strategic, and national policy interests. Because successful *Nodal Capture* achieves control of the city with fewer casualties and less infrastructure damage than traditional approaches, JTF operations are less likely to produce unintended negative consequences.

The JTF commander establishes, organizes, and operates his headquarters from one of the secure forward operating bases in his AO. A location is chosen that balances force protection and security with effectiveness.

In conducting *Nodal Capture*, the JTFs are able to integrate and control operational information operations**.** This gives the JTFs the following capabilities:

- to enhance the dislocating effect produced on the adversary (particularly the adversary's senior decision makers), and
- to either neutralize or exploit the non-combatant population.

Information Operations support the effort for the following reasons:

- to psychologically separate the adversary from identified critical sources of support, and
- to convince the adversary commanders they can neither expel JTF occupying forces nor craft "work-around" solutions to replace the loss of key support infrastructure.

JTF Information Operations supports activities to achieve the following:

- to gain city-wide advantages over an adversary, and
- to introduce operationally significant obstacles on a city-wide scale to paralyze an adversary's infrastructure.

As opportunities to implement consolidation and transition plans appear even in the early phases of *Nodal Capture* operations, the JTF's ability to co-

ordinate and integrate joint, multi-national, and interagency support is especially important. Even before the dislocating effect of *Nodal Capture* is felt across the city-wide systems, adversary forces will begin to loose their grip on the population and on agencies that provide civil services and support. Long before the city is under the full control of friendly forces, there will be opportunities and requirements to permit exterior support and services to enter and assist the non-combatant population. In addition to assigning tasks to forces, the JTF commander exploits this loss of adversary control on population services, and support by performing the following tasks:

- understanding national, multi-national, agency, and non-governmental agendas;
- coordinating with non-DoD, host nation, and coalition support; and
- introducing a relevant community relations program.

The ability to manage media relations so as to accurately portray the JTF's intentions is critical throughout *Nodal Capture* operations. *Nodal Capture* does not "look" like traditional urban operations, and activities sometimes go astray of policy—the JTF commander is prepared to truthfully explain these things.

Additionally, the JTF coordinates a robust command and/or internal information program designed to ensure personnel, especially those operating in the city or coming in contact with the non-combatant population, are fully armed with the JTF ROE, the purpose of the operation (why we are here), and commander's intent for the current activities.

B.2.6 Force Protection

A JTF using *Nodal Capture* to control a city operates as part of a larger joint force and is protected by the established theater air, space, and missile defense. Because the JTF relies heavily on remotely delivered fires to support *Nodal Capture*, it crafts both positive and procedural control measures that facilitate persistent surveillance and target acquisition over the city and employment of sufficient joint firepower assets to defeat adversary forces defending key nodes or counterattacking JTF ground forces.

Because of the density of the urban environment, JTF forces, particularly those operating on the ground and in the air over the city, will be especially

vulnerable. The JTF commander plans for personnel recovery and joint search and rescue; and counters adversary deception and psychological operations. JTF ground forces sent into the city have strong countermine and mobility capabilities.

Striking an acceptable balance between protection for friendly forces, mission accomplishment, and risk to non-combatants is especially difficult within the close confines of the city. The JTF commander prepares (operationally significant) defenses and removes hazards (e.g., pollution and HAZMAT) for operational forces, their means, and non-combatants. Protecting the forward operating bases supporting *Nodal Capture* operations will be especially important. Providing counter-reconnaissance, and security of flanks, rear areas, critical facilities, systems, and LOCs may consume as many JTF forces as does the primary effort to capture key nodes in the city.

In conducting *Nodal Capture* JTF forces may intentionally conduct non-combatant evacuations or be forced to by unforeseen events. The JTF commander anticipates the effects of operations on the non-combatant population, and employs evacuation in cases in which it is feasible and contributes to separating adversary forces from their accustomed sources of strength—and establishing JTF forces in firm control of these positions. Because of the massive support requirements, large-scale non-combatant evacuations are generally not considered feasible.

The JTF commander conducts operational deception in order to support the rapid capture of key sources of support in the city. JTF deception encourages the adversary to reveal and expose critical nodes; compounds the psychologically debilitating effect of being separated from accustomed sources of strength, and encourages ill-timed counterattacks that make him vulnerable to JTF defensive operations.

B.2.7 Counter CBRNE Weapons

While the JTF falls under the overall theater effort to neutralize adversary CBRNE weapons, no other threat capability has the same potential to disrupt a *Nodal Capture* approach to controlling a city. Indeed, adversary CBRNE systems represent critical nodes that receive high priority in the capture effort. The JTF commander integrates the CBRNE weapons situation into his JISR (joint intelligence, surveillance, and reconnaissance) and includes information

on CBRNE weapon-delivery systems, toxic industrial materials, adversary intent, and possible courses of action.

The density of the city makes it an ideal place to produce, store, deliver, and employ CBRNE weapons. If JTF *Nodal Capture* operations are successful, they will deny control of a key urban area to the adversary with dire operational and strategic consequences. Losing a key city may be so devastating a proposition to the adversary's senior decision makers that they may employ chemical, biological, radiological, nuclear, or high-yield explosives to prevent it. This is especially so the more important the city (e.g., a capital). The JTF commander understands that one of the unintended consequences of causing rapid adversary dislocation, loss of control, and disorientation is that the adversary might resort to CBRNE weapons in a last-ditch effort to stave off disaster.

The JTF commander coordinates with theater plans to prevent the adversary from employing CBRNE weapons and, if prevention fails, to locate hazards, take necessary protective actions, and decontaminate as necessary. Also included are activities such as post-hostility remediation, preparing equipment for redeployment and final disposal *in situ,* or removing an adversary's residual CBRNE weapon capability .d.

Specifically, a JTF conducting using *Nodal Capture* to control a city coordinates conventional and unconventional CBRNE counterforce operations into its plan to capture sources of support. Production, infrastructure, and delivery systems are targeted for both lethal and non-lethal means. The JTF commander implements active and passive CBRNE defense measures for his forces, means, critical nodes, facilities, and rear areas. Finally, as part of his consolidation and transition plan, the JTF commander coordinates support for interagency essential services and activities required to manage and mitigate damage resulting from the employment of CBRNE weapons or release of toxic industrial materials and/or contaminants. Services and activities can include the following:

- communications
- decontamination
- energy
- fire fighting
- food
- information and planning
- mass care
- population evacuation
- public works and engineering
- resource support

- hazardous materials
- health and medical services
- transportation
- urban search and rescue (SAR)

The JTF is prepared to execute CBRNE consequence management activities at any time during operations.

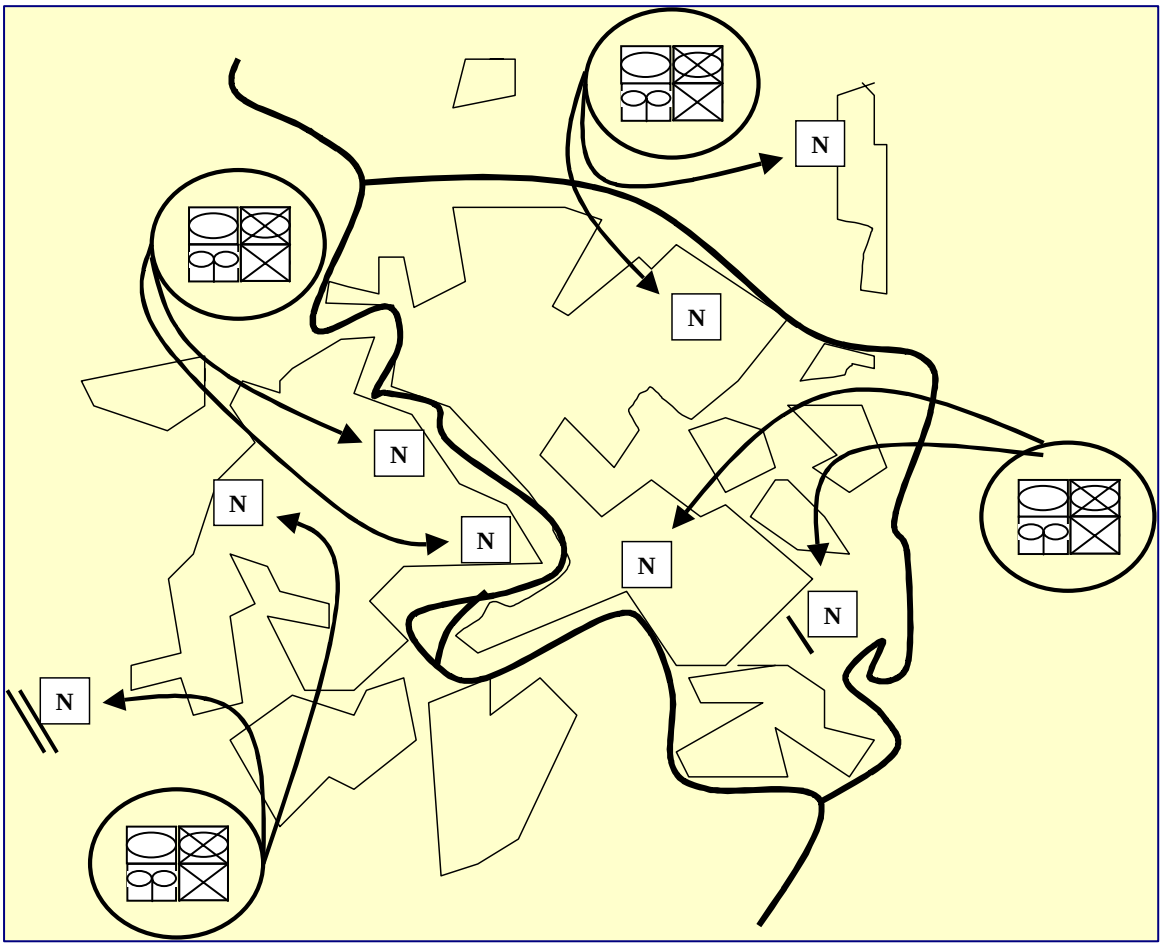


Figure 2. Nodal Capture

B.3 How the JTF Employs a Nodal Isolation Approach to Defeat an Adversary in a City.

Nodal Isolation is an approach that (physically and psychologically) seals critical (structural and non-structural) nodes from an adversary to deny him sources of support and freedom of movement, and to prevent contact between adversary forces. This approach exploits the psychologically debilitating effects produced when forces are separated from their accustomed sources of strength. It requires knowing which nodes are critical and how they interact. The joint force commander seeks to minimize ground force presence by isolating nodes largely through the use of counter-mobility assets and remote fires. Isolating the city from (or controlling) outside sources of supply and reinforcement is a key requirement. For a depiction of this concept, see Figure 3 on page 35 .

B.3.1 Movement and Maneuver

A JTF using *Nodal Isolation* to control a city operates as part of a larger joint force. As a result, many of the tasks associated with operational movement are fulfilled by the larger joint operation infrastructure. Strategic deployment, Joint RSOI, and coordinating host nation support are examples. Indeed, the overall JFC makes efforts to reduce the JTF workload as much as possible so he can focus on the urban operation at hand. Likewise, considerations like airspace management, air and maritime superiority, and isolating the JOA are out of the hands of an urban JTF commander. A major urban operation is likely to be the JFCs main effort and the JTF commanders task is to define and articulate requirements for supporting organizations.

Seeking to wrest control of a city from an adversary is an operational-level offensive operation. As such, the JTF commander is concerned with intra-theater deployment and redeployment so as to position sufficient forces to achieve the timings and effects required of a nodal isolation operation. Additionally, assembling, posturing, and transitioning forces so as to produce the key effect of sealing critical areas in a city from an adversary is a vitally important activity for the JTF commander and his staff. In developing a concept of operations along the lines of *Nodal Isolation*, the JTF commander

views the city as a *system of systems* to be addressed in its entirety. Timings, effects, and sequencing of JTF activities are crafted to produce the key desired effect of sealing the adversary from identified critical sources of support. To fully exploit the debilitating effects of a *Nodal Isolation* at the city-scale, key systems are addressed in a sequence and with timings that produce maximum dislocation. *Nodal Isolation* begins to win the moment the adversary commander can no longer craft "work-around" solutions to replace the loss of key support infrastructure.

Depending on the situation, the JTF commander employs the full range of activities to achieve city-wide positional, tempo, strength, morale, or time-competitive OODA cycle advantages over an adversary. Examples of such activities include the following:

- shows of force
- demonstrations
- airborne/air assaults
- raids
- penetrations
- assaults
- unconventional and special operations

Key to success in *Nodal Isolation* is three particular activities:

- overcoming operationally significant barriers and obstacles,
- enhancing the movement of JTF forces, and
- imposing devastating counter-mobility.

In one sense, *Nodal Isolation* seeks to introduce *operationally significant obstacles* on a city-wide scale to paralyze an adversary's infrastructure.

B.3.2 ISR

In addition to producing a standard Joint IPB for its target city, JTFs conducting *Nodal Isolation* operations apply organic resources and request outside support specifically to identify the key (structural and non-structural) nodes. This effort requires a continuously refreshed understanding of the complicated and, more often, complex adaptive cultural, political, historical, demographic, economic, military, and geographic systems in play in the city.

Although obtaining complete knowledge is not possible, the probability of success is directly proportional to how well the JTF correctly performs the following:

- identifies the key nodes;
- continually understands the city at least as well and preferably better than its inhabitants;
- and anticipates the potential work-arounds its defenders might employ.

To achieve these objectives, the JTF employs the full range of technical capability, multi-source information and intelligence fusion, and rapid analysis and dissemination. Considered are the employment of air and space sensors, and the "intelligences" (human, imagery, signals, open-source, measurement and signature, and counter).

JTF ISR addresses non-combatants whose presence in the urban area will be substantial and dynamic. The JTF plan to achieve advantage over the adversary through *Nodal Isolation* includes activities to either neutralize or exploit the non-combatant population. Therefore, determining the ethnic and religious composition of the population and, if possible, their intent (flee/remain, support/resist) is crucial.

B.3.3 Firepower

JTFs conducting *Nodal Isolation* target and attack operational, high pay off, and high value target sets to physically and psychologically seal critical structural and non-structural nodes from an adversary in order to deny him sources of support, freedom of movement, and to prevent contact between adversary forces. The JTF employs joint firepower so as to minimize the requirements for a ground force presence in the city.

To accomplish this, the JTF establishes persistent surveillance and target acquisition over the key nodes and deploys sufficient joint firepower assets to interdict adversary forces attempting to defeat the isolation. Employment of PSYOPs, electronic, and informational attacks as well as non-lethal attacks on personnel, equipment, and installations are all key components of the JTF plan.

Air, surface, sub-surface, and special operations means deny use of routes and approaches; and prevent, hinder, or delay the use of key areas to dislocate the adversary's key support systems. Joint firepower also supports achieving city-wide positional, tempo, strength, morale, or time-competitive OODA cycle advantages (operational maneuver) over the adversary.

B.3.4 Logistics and Personnel Support

A JTF using *Nodal Isolation* to control a city will be operating as part of a larger joint force. As a result, many of the tasks associated with logistics and personnel support are fulfilled by the larger joint and component logistics infrastructure. This includes the supply of arms, munitions, equipment, fuel, maintenance, as well as the full range of force support functions. A major urban operation will likely be the JFCs main effort and the JTF commanders task is to define and articulate requirements for supporting organizations.

The JTF commander ensures robust support and services especially for ground forces committed into the city by establishing secure forward operating bases. These safe havens provide the full range of field, personnel, and health services; and facilitate the flow of casualties, training, rehearsal, and reconstitution. JTF ground forces conducting *Nodal Isolation* are small, dispersed, and lethal. As such, they are especially vulnerable to being cutoff from their own sources of support. In addition, these forces require significant mobility, counter-mobility, and survivability assets.

A JTF commander using *Nodal Isolation* to control a city is prepared to exploit success in all phases to conduct simultaneous consolidation and transition operations. Early re-introduction of civil support and services not only facilitates JTF control of the city but also undermines the morale and credibility of the adversary. The JTF commander has forces on standby to implement the JTF stability and support plan in potentially widely separated areas of the city as soon as they become available. Activities include the following:

- civil affairs
- civil-military operations
- coordination of political-military support
- disaster control
- foreign internal defense / law enforcement
- prisoner control
- real-estate management
- security assistance
- support to agencies
- transition to civil administration

B.3.5 Command and Control

As with the other functional areas already discussed, a JTF using nodal isolation to control a city operates under the C4 policies, procedures, and infrastructure established and managed for the overall JOA.

Within his AO, the JTF commander establishes robust and redundant capabilities to perform the following:

- seek to continually refresh the view of the effects his operations are causing on JTF forces, the adversary, the non-combatant population, and the other systems in play in the city (CCIRs);
- acquire and communicate operational-level information;
- maintain status; and
- assess the operational situation.

In addition to understanding the local city situation, the JTF commander also looks "out and up" to ensure his activities remain relevant to shifting theater and strategic goals, and national policy.

In addition to ensuring a reasonable capability to acquire and process information, the JTF commander also organizes his forces so that they are able to accomplish missions with less information. Decision thresholds and resources are pushed to the lowest levels, and the JTF commander accepts that he will often not know as much about local conditions as his tactical commanders will.

The JTF commander develops, approves, and issues plans and orders describing the timings, effects, and sequencing of JTF activities designed to seal the adversary from critical sources of support. Because of the density of non-combatants and protected infrastructure within the city, the JTF Rules of Engagement (ROE are carefully crafted to ensure the success of tactical activities and force protection without betraying the larger operational, strategic, and national policy interests. Because successful *Nodal Isolation* rapidly achieves control of the city with fewer casualties and less infrastructure damage than traditional approaches, JTF operations are less likely to produce unintended negative consequences.

The JTF commander establishes, organizes, and operates his headquarters from one of the secure forward operating bases in his AO. A location is chosen that balances force protection and security with effectiveness.

In conducting *Nodal Isolation*, JTFs are able to integrate and control operational information operations. This gives the JTFs the following capabilities:

- to enhance the dislocating effect produced on the adversary (particularly the adversary's senior decision makers), and
- to either neutralize or exploit the non-combatant population.

Information Operations supports the effort for the following reasons:

- to psychologically separate the adversary from identified critical sources of support and
- to convince the adversary commanders they can no longer craft "work-around" solutions to replace the loss of key support infrastructure.

JTF Information Operations supports activities to achieve the following:

- to gain city-wide advantages over an adversary and
- to introduce operationally significant obstacles on a city-wide scale to paralyze an adversary's infrastructure.

As opportunities to implement consolidation and transition plans appear even in the early phases of *Nodal Isolation* operations, the JTF's ability to coordinate and integrate joint, multi-national, and interagency support is especially important. Even before the dislocating effect of nodal isolation is felt across the city-wide systems, adversary forces will begin to loose their grip on the population and on agencies that provide civil services and support. Long before the city is under the full control of friendly forces, there will be opportunities and requirements to permit exterior support and services to enter and assist the non-combatant population. In addition to assigning tasks to forces, the JTF commander exploits this loss of adversary control on population services, and support by performing the following tasks:

- understanding national, multi-national, agency, and non-governmental agendas;
- coordinating with non-DoD, host nation, and coalition support; and
- introducing a relevant community relations program.

The ability to manage media relations so as to accurately portray the JTF's intentions is critical throughout *Nodal Isolation* operations. *Nodal Isolation* does not "look" like traditional urban operations, and activities sometimes go astray of policy—the JTF commander is prepared to truthfully explain these things.

Additionally, the JTF coordinates a robust command and/or internal information program designed to ensure personnel, especially those operating in the city or coming in contact with the non-combatant population, are fully armed with the JTF ROE, the purpose of the operation (why we are here), and commander's intent for the current activities.

B.3.6 Force Protection

A JTF using *Nodal Isolation* to control a city will be operating as part of a larger joint force and is protected by the established theater air, space, and missile defense. Because the JTF relies heavily on remotely delivered fires to effect *Nodal Isolation*, it crafts both positive and procedural control measures that facilitate the following:

- persistent surveillance and target acquisition over the key nodes, and
- employment of sufficient joint firepower assets to interdict adversary forces attempting to defeat the isolation.

Because of the density of the urban environment, JTF forces, particularly those operating on the ground and in the air over the city, will be especially vulnerable. The JTF commander plans for personnel recovery and joint search and rescue; and counters adversary deception and psychological operations. JTF ground forces sent into the city have strong countermine and mobility capabilities.

Striking an acceptable balance between protection for friendly forces, mission accomplishment, and risk to non-combatants is especially difficult within the

close confines of the city. The JTF commander prepares (operationally significant) defenses and removes hazards (e.g., pollution and HAZMAT) for operational forces, their means, and non-combatants. Protecting the forward operating bases supporting nodal isolation operations will be especially important. Providing counter-reconnaissance, and security of flanks, rear areas, critical facilities, systems, and LOCs may consume as many JTF forces as does the primary effort to isolate key nodes in the city.

In conducting *Nodal Isolation*, JTF forces may intentionally conduct non-combatant evacuations or be forced to by unforeseen events. The JTF commander anticipates the effects of *Nodal Isolation* on the non-combatant population and employs evacuation in those cases in which it is feasible and contributes to the overall goal of separating adversary forces from their accustomed sources of strength. Because of the massive support requirements, large-scale non-combatant evacuations are generally not considered feasible.

The JTF commander conducts operational deception to support the rapid isolation of key sources of support in the city. JTF deception encourages the adversary to reveal and expose critical nodes and compounds the psychologically debilitating effect of being separation from accustomed sources of strength.

B.3.7 Counter CBRNE Weapons

While the JTF falls under the overall theater effort to neutralize adversary CBRNE weapons, no other threat capability has the same potential to disrupt a *Nodal Isolation* approach to controlling a city. Indeed, adversary CBRNE systems represent critical nodes that receive high priority in the isolation effort. The JTF commander integrates the CBRNE weapons situation into his JISR and includes information on CBRNE weapon-delivery systems, toxic industrial materials, adversary intent, and possible courses of action.

The density of the city makes it an ideal place to produce, store, deliver, and employ CBRNE weapons. If JTF *Nodal Isolation* operations are successful, they will deny control of a key urban area to the adversary with dire operational and strategic consequences. Losing a key city may be so devastating a proposition to the adversary's senior decision makers that they may employ chemical, biological, radiological, nuclear, or high-yield explosives to prevent it. This is especially so the more important the city (e.g., a capital). The JTF commander understands that one of the unintended consequences of caus-

ing rapid adversary dislocation, loss of control, and disorientation is that they might resort to CBRNE weapons in a last-ditch effort to stave off disaster.

The JTF commander coordinates with theater plans to prevent the adversary from employing CBRNE weapons and, if prevention fails, to locate hazards, take necessary protective actions, and decontaminate as necessary. Activities such as post-hostility remediation, preparing equipment for redeployment and final disposal *in situ*, or removing an adversary's residual CBRNE weapon capability are also included.

Specifically, a JTF conducting using *Nodal Isolation* to control a city coordinates conventional and unconventional CBRNE counterforce operations into its plan to isolate sources of support. Production, infrastructure, and delivery systems are targeted for both lethal and non-lethal means. The JTF commander implements active and passive CBRNE defense measures for his forces, means, critical nodes, facilities, and rear areas.

Finally, as part of his consolidation and transition plan, the JTF commander coordinates support for interagency essential services and activities required to manage and mitigate damage resulting from the employment of CBRNE weapons or release of toxic industrial materials and/or contaminants. Services and activities can include the following:

- population evacuation
- decontamination
- transportation
- communications
- public works and engineering
- fire fighting
- information and planning
- mass care
- resource support
- health and medical services
- urban SAR
- hazardous materials
- food
- energy

The JTF is prepared to execute consequence management activities at any time during operations.

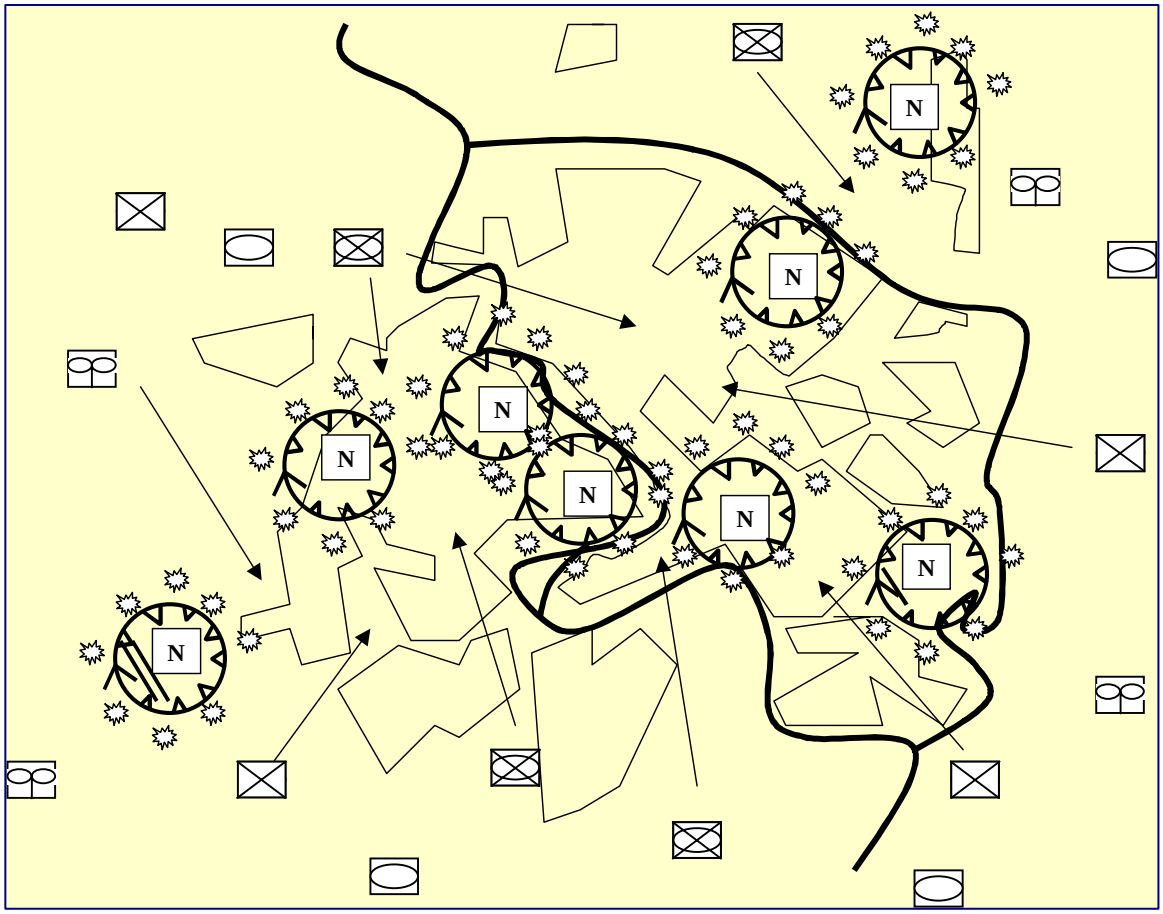


Figure 3. Nodal Isolation

B.4 How the JTF Employs a Precision Strike Approach to Defeat an Adversary in a City

Precision Strike is an approach that uses precision attacks (aerospace strike operations, special operations direct action, and ground force attack by fire) to destroy, fix, and suppress a large percentage of the adversary's capability from a distance and cut him off from outside sources of supply and reinforcement without occupying ground. It requires precisely knowing adversary force locations and nodes, and how they interact. The joint force commander minimizes ground force presence by employing remotely delivered fires and special operations direct action as his primary defeat mechanisms. Isolating the city from (or controlling) outside sources of supply and reinforcement is a key requirement. For a depiction of this concept, see Figure 4 on page 45.

B.4.1 Movement and Maneuver

A JTF using *Precision Strike* to control a city operates as part of a larger joint force. As a result, many of the tasks associated with operational movement are fulfilled by the larger joint operation infrastructure. Strategic deployment, Joint RSOI, and coordinating host nation support are examples. Indeed, the overall JFC makes efforts to reduce the JTF workload as much as possible so he can focus on the urban operation at hand. Likewise, considerations like airspace management, air and maritime superiority, and isolating the JOA are out of the hands of an urban JTF commander. A major urban operation is likely to be the JFCs main effort and the JTF commanders task is to define and articulate requirements for supporting organizations.

Seeking to wrest control of a city from an adversary is an operational-level offensive operation. As such, the JTF commander is concerned with intratheater deployment and redeployment so as to position sufficient forces to achieve the timings and effects required of a *Precision Strike* operation. Additionally, assembling, posturing, and transitioning forces so as to produce the key effect of sealing critical areas in a city from an adversary is a vitally important activity for the JTF commander and his staff. In developing a concept of operations along the lines of *Precision Strike*, the JTF commander

views the city as a *system of systems* to be addressed in its entirety. Timings, effects, and sequencing of JTF activities are crafted to produce the key desired effect of destroying a large percentage of the adversary's warfighting capability. To fully exploit the debilitating effects of a *Precision Strike* at the city-scale, key systems are addressed in a sequence and with timings that produce maximum dislocation. Precision Strike begins to win the moment the adversary commander perceives a rapid and overwhelming loss of key support infrastructure, resulting in operationally significant failures across the full range of functional areas.

Unlike other approaches, a JTF commander using *Precision Strike* to control a city focuses on special forces direct action, small-unit engagement, and remotely delivered fires to achieve city-wide positional, tempo, strength, morale, or time-competitive OODA cycle advantages over an adversary. Significant ground operations in the traditional sense are not employed.

Unlike other ground-centric approaches, *Precision Strike* largely avoids the issue of overcoming operationally significant barriers and obstacles, and enhancing the movement of JTF forces. *Precision Strike* introduces operationally significant obstacles on a city-wide scale to paralyze an adversary's infrastructure without the operating costs and risks associated with sending large ground forces into the city.

B.4.2 ISR

In addition to producing a standard Joint IPB for its target city, JTFs conducting *Precision Strike* operations apply organic resources and request outside support specifically to identify critical adversary (structural and non-structural) nodes, and specifically those that are vulnerable to the range of JTF resources and methods being considered. This effort requires a continuously refreshed understanding of the complicated and, more often, complex adaptive cultural, political, historical, demographic, economic, military, and geographic systems in play in the city. Although obtaining complete knowledge is not possible, the probability of success is directly proportional to how well the JTF correctly identifies the following:

- the adversary's goals and aims;
- the sources of strength they will employ to attain them; and

- the underlying capabilities and requirements that can be made vulnerable with decisive effects.

JTF ISR provides this understanding against a background that continually understands the city at least as well and preferably better than its inhabitants, and anticipates the potential work-arounds its defenders might employ.

To achieve these objectives, the JTF employs the full range of technical capability, multi-source information and intelligence fusion, and rapid analysis and dissemination. Employment of air and space sensors, human intelligence, imagery intelligence, signals intelligence, open-source intelligence, measurement and signature intelligence, and counterintelligence are all considered.

JTF ISR addresses noncombatants whose presence in the urban area will be substantial and dynamic. The JTF plan to achieve advantage over the adversary through *Precision Strike* includes activities to either neutralize or exploit the non-combatant population. Therefore determining the ethnic and religious composition of the population and, if possible, their intent (flee/remain, support/resist) is crucial.

B.4.3 Firepower

In conducting *Precision Strike*, the JTFs are able to target and attack operational, high payoff, and high-value target sets to attrite adversary capabilities and cut him off from outside sources of supply and reinforcement. The JTF employs joint firepower so as to minimize the requirements for a ground force presence in the city.

To accomplish this, the JTF establishes persistent surveillance and target acquisition over the city and deploys sufficient joint firepower assets to produce the desired effects, sequencing, and timings on adversary capabilities. Employment of PSYOPs, electronic, and informational attacks as well as non-lethal attacks on personnel, equipment, and installations are all key components of the JTF plan.

To dislocate the adversary's key support systems, the JTF commander uses air, surface, sub-surface, and special operations means to physically render adversary forces combat ineffective, and so damage material targets that they cannot function as intended or be restored to a usable condition. Joint fire-

power is the main implement by which the JTF achieves city-wide tempo, strength, morale, and time-competitive OODA cycle advantages (operational maneuver) over the adversary.

B.4.4 Logistics and Personnel Support

A JTF using *Precision Strike* to control a city will be operating as part of a larger joint force. As a result, many of the tasks associated with logistics and personnel support are fulfilled by the larger joint and component logistics infrastructure. This includes the supply of arms, munitions, equipment, fuel, maintenance, as well as the full range of force support functions. A major urban operation will likely be the JFCs main effort, and the JTF commander's task is to define and articulate requirements for supporting organizations.

The JTF commander ensures robust support and services especially for ground forces committed into the city by establishing secure forward operating bases. These safe havens provide the full range of field, personnel, and health services; and facilitate the flow of casualties, training, rehearsal, and reconstitution. The minimal JTF ground forces involved in *Precision Strike* operations are small, dispersed, and lethal. As such, they are especially vulnerable to being cutoff from their own sources of support, and require significant mobility, counter-mobility, and survivability assets.

A JTF commander using *Precision Strike* to control a city is prepared to exploit success in all phases to conduct simultaneous consolidation and transition operations. Early re-introduction of civil support and services not only facilitates JTF control of the city but also undermines the morale and credibility of the adversary. The JTF commander has forces on standby to implement the JTF stability and support plan in potentially widely separated areas of the city as soon as these areas become available. Activities include the following:

- civil-military operations
- law enforcement
- prisoner control
- real-estate management
- security assistance
- support to agencies
- transition to civil administration
- coordination of political-military support
- civil affairs
- foreign internal defense
- disaster control

B.4.5 Command and Control

As with the other functional areas already discussed, a JTF using *Precision Strike* to control a city operates under the C4 policies, procedures, and infrastructure established and managed for the overall JOA.

Within his AO, the JTF commander establishes robust and redundant capabilities to perform the following:

- seek a continually refreshed view of the effects his precision strike operation is having on the adversary and systems in play in the city (CCIRs);
- acquire and communicate operational-level information;
- maintain status; and
- assess the operational situation.

In addition to understanding the local city situation, the JTF commander also looks "out and up" to ensure his activities remain relevant to shifting theater and strategic goals, and national policy.

In addition to ensuring a reasonable capability to acquire and process information, the JTF commander also organizes his forces so that they are able to accomplish missions with less information. Decision thresholds and resources are pushed to the lowest levels, and the JTF commander accepts that he will often not know as much about local conditions as his tactical commanders will.

The JTF commander develops, approves, and issues plans and orders describing the timings, effects, and sequencing of JTF activities designed to destroy a large percentage of the adversary's capability and cut him off from outside sources of supply and reinforcement. Because of the density of noncombatants and protected infrastructure within the city, the JTF Rules of Engagement (ROE) are carefully crafted to ensure the success of tactical activities and force protection without betraying the larger operational, strategic, and national policy interests. Because successful *Precision Strike* rapidly achieves control of the city with fewer casualties and less infrastructure dam-

age than traditional approaches, JTF operations are less likely to produce unintended negative consequences.

The JTF commander establishes, organizes, and operates his headquarters from one of the secure forward operating bases in his AO. A location is chosen that balances force protection and security with effectiveness.

In conducting *Precision Strike*, the JTFs are able to integrate and control operational information operations. This gives the JTFs the capabilities to enhance the dislocating effect produced on the adversary (particularly the adversary's senior decision makers) and the capability to either neutralize or exploit the non-combatant population.

Information Operations supports the effort for the following reasons:

- to convince the adversary commanders they can no longer craft "work-around" solutions to replace the loss of key capabilities, and
- that their reactions to JTF operations are having less and less relevance over time.

JTF Information Operations supports these activities to achieve the following:

- to gain city-wide advantages over an adversary, and
- to introduce operationally significant obstacles on a city-wide scale to paralyze an adversary's infrastructure.

As opportunities to implement consolidation and transition plans appear even in the early phases of *Precision Strike* operations, the JTF's ability to coordinate and integrate joint, multi-national, and interagency support is especially important. Even before the dislocating effect of *Precision Strike* is felt across the city-wide systems, adversary forces will begin to loose their grip on the population and on agencies that provide civil services and support. Long before the city is under the full control of friendly forces, there will be opportunities and requirements to permit exterior support and services to enter and assist the non-combatant population.

In addition to assigning tasks to forces, the JTF commander exploits this loss of adversary control on population services, and support by performing the following tasks:

- understanding national, multi-national, agency, and non-governmental agendas;
- coordinating with non-DoD, host nation, and coalition support; and
- introducing a relevant community relations program.

The ability to manage media relations so as to accurately portray the JTF's intentions is critical throughout *Precision Strike* operations. *Precision Strike* does not "look" like traditional urban operations, and activities sometimes go astray of policy—the JTF commander is prepared to truthfully explain these things.

Additionally, the JTF coordinates a robust command and/or internal information program designed to ensure personnel, especially those operating in the city or coming in contact with the non-combatant population, are fully armed with the JTF ROE, the purpose of the operation (why we are here), and commander's intent for the current activities.

B.4.6 Force Protection

A JTF using *Precision Strike* to control a city will be operating as part of a larger joint force and is protected by the established theater air, space, and missile defense. Because the JTF relies heavily on remotely delivered fires to effect *Precision Strike*, it crafts both positive and procedural control measures that facilitate the following:

- persistent surveillance and target acquisition over the key nodes, and
- employment of sufficient joint firepower assets to strike adversary capabilities and cut him off from outside sources of supply and reinforcement.

Because of the density of the urban environment, JTF forces, particularly those operating on the ground and in the air over the city, will be especially vulnerable. The JTF commander plans for personnel recovery and joint search and rescue; and counters adversary deception and psychological op-

erations. JTF ground forces sent into the city have strong countermine and mobility capabilities.

Striking an acceptable balance between protection for friendly forces, mission accomplishment, and risk to non-combatants is especially difficult within the close confines of the city. The JTF commander prepares (operationally significant) defenses and removes hazards (e.g., pollution and HAZMAT) for operational forces, their means, and non-combatants. Protecting the forward operating bases supporting *Precision Strike* operations will be especially important. Providing counter-reconnaissance, and security of flanks, rear areas, critical facilities, systems, and LOCs may consume as many JTF forces as does the primary effort to isolate key nodes in the city.

In conducting precision strike, JTF forces may intentionally conduct non-combatant evacuations or be forced to by unforeseen events. The JTF commander anticipates the effects of *Precision Strike* on the non-combatant population and employs evacuation in those cases in which it is feasible and contributes to the overall goal of destroying the adversary forces. Because of the massive support requirements, large-scale non-combatant evacuations are generally not considered feasible.

The JTF commander conducts operational deception to support the rapid destruction of adversary forces in the city. JTF deception encourages the adversary to expose high-value and high-payoff targets, and compounds the psychologically debilitating effect of not being able to avoid systematic destruction of the means to resist.

B.4.7 Counter CBRNE Weapons

While the JTF falls under the overall theater effort to neutralize adversary CBRNE weapons, no other threat capability has the same potential to disrupt a *Precision Strike* approach to controlling a city. Indeed, adversary CBRNE systems represent critical nodes that receive high priority in the destruction effort. The JTF commander integrates the CBRNE weapons situation into his JISR and includes information on CBRNE weapon-delivery systems, toxic industrial materials, adversary intent, and possible courses of action.

The density of the city makes it an ideal place to produce, store, deliver, and employ CBRNE weapons. If JTF *Precision Strike* operations are successful, they will deny control of a key urban area to the adversary with dire opera-

tional and strategic consequences. Losing a key city may be so devastating a proposition to the adversary's senior decision makers that they may employ chemical, biological, radiological, nuclear, or high-yield explosives to prevent it. This is especially so the more important the city (e.g., a capital). The JTF commander understands that one of the unintended consequences of causing rapid adversary dislocation, loss of control, and disorientation is that they might resort to CBRNE weapons in a last-ditch effort to stave off disaster.

The JTF commander coordinates with theater plans to prevent the adversary from employing CBRNE weapons and, if prevention fails, to locate hazards, take necessary protective actions, and decontaminate as necessary. Activities such as post-hostility remediation, preparing equipment for redeployment and final disposal *in situ*, or removing an adversary's residual CBRNE weapon capability are also included.

Specifically, a JTF conducting using *Precision Strike* to control a city coordinates conventional and unconventional CBRNE counterforce operations into its plan to destroy sources of support. Production, infrastructure, and delivery systems are targeted for both lethal and non-lethal means. The JTF commander implements active and passive CBRNE defense measures for his forces, means, critical nodes, facilities, and rear areas.

Finally, as part of his consolidation and transition plan, the JTF commander coordinates support for interagency essential services and activities required to manage and mitigate damage resulting from the employment of CBRNE weapons or release of toxic industrial materials and/or contaminants. Services and activities can include the following:

- population evacuation
- decontamination
- transportation
- communications
- public works and engineering
- fire fighting
- information and planning
- mass care
- resource support
- health and medical services
- urban SAR
- hazardous materials
- food
- energy

The JTF is prepared to execute consequence management activities at any time during operations.

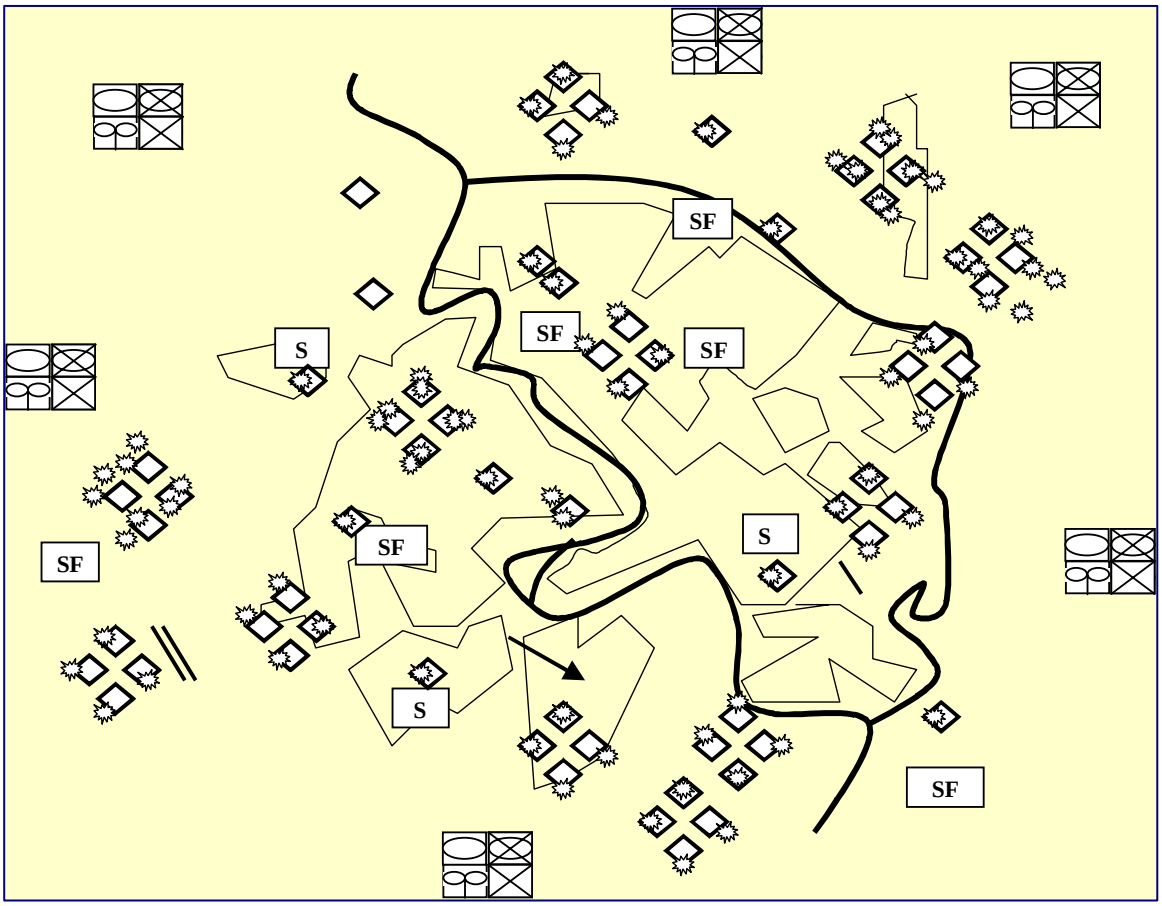


Figure 4. Precision Strike

B.5 How the JTF Employs a Segment and Capture Approach to Defeat an Adversary in a City

Segment and Capture is an approach that employs counter-mobility to fix the adversary forces so they lose the ability to mass for either defensive or offensive purposes and can be defeated piecemeal. Segmenting the city also severely disrupts adversary logistical operations. Central caches of arms and supplies, or critical nodes of the city's infrastructure, can no longer support units in other parts of the city. In those sections of the city not containing adversary forces, efforts at reestablishing the indigenous support infrastructure or bringing in outside support can begin early. Adversary forces are also cut off from outside sources of supply and reinforcement. For a depiction of this concept, see Figure 5 on page 55.

B.5.1 Movement and Maneuver

A JTF using segment and capture to control a city operates as part of a larger joint force. As a result, many of the tasks associated with operational movement are fulfilled by the larger joint operation infrastructure. Strategic deployment, Joint RSOI, and coordinating host nation support are examples. Indeed, the overall JFC makes efforts to reduce the JTF workload as much as possible so he can focus on the urban operation at hand. Likewise, considerations like airspace management, air and maritime superiority, and isolating the JOA are out of the hands of an urban JTF commander. A major urban operation is likely to be the JFCs main effort and the JTF commanders task is to define and articulate requirements for supporting organizations.

Seeking to wrest control of a city from an adversary is an operational-level offensive operation. As such, the JTF commander is concerned with intra-theater deployment and redeployment so as to position sufficient forces to achieve the timings and effects required of a segment and capture operation. Additionally, assembling, posturing, and transitioning forces so as to produce the key effects of fixing the defending adversary forces and interdicting their combat service support systems are vitally important activities for the JTF commander and his staff.

In developing a concept of operations along the lines of segment and capture, the JTF commander first views the city as a system of systems in which counter-mobility is employed to prevent the adversary from moving or supplying his forces. Timings, effects, and sequencing of JTF activities are crafted to produce the key desired effects of establishing multiple obstructions which disrupt, fix, turn, or block adversary movement. To fully exploit the debilitating effects of segment and capture at the city-scale, the JTF uses a combination of natural and manmade obstacle belts to impose losses in personnel, time, and equipment on the adversary and to shape his forces for follow-on decisive defeat in detail. *Segment and Capture* begins to win the moment the adversary commander realizes that he can no longer move, resupply, or reinforce his units.

Key to success in *Segment and Capture* is three particular activities:

- overcoming operationally significant barriers and obstacles,
- enhancing the movement of JTF forces, and
- imposing devastating counter-mobility.

B.5.2 ISR

In addition to producing a standard Joint IPB for its target city, JTFs conducting segment and capture operations apply organic resources and request outside support specifically to identify potential obstacle points, lines, groups, and zones; and obtain a detailed understanding of the adversary's defensive (in particular CSS) plan. This effort requires a continuously refreshed understanding of the complicated and, more often, complex adaptive military, cultural, political, historical, demographic, economic, and geographic systems in play in the city. Although obtaining complete knowledge is not possible, the probability of success is directly proportional to how well the JTF correctly performs the following:

- identifies how and where the city can be segmented to fix the adversary;
- continually understands the city at least as well and preferably better than its inhabitants;
- and anticipates the reactions its defenders might employ.

To achieve these objectives, the JTF employs the full range of technical capability, multi-source information and intelligence fusion, and rapid analysis and dissemination. Employment of air and space sensors, human intelligence, imagery intelligence, signals intelligence, open-source intelligence, measurement and signature intelligence, and counterintelligence are all considered.

JTF ISR addresses non-combatants whose presence in the urban area will be substantial and dynamic. The JTF plan to achieve advantage over the adversary through *Segment and Capture* includes activities to either neutralize or exploit the non-combatant population. Therefore determining the ethnic and religious composition of the population and, if possible, their intent (flee/remain, support/resist) is crucial.

B.5.3 Firepower

In conducting *Segment and Capture*, the JTFs are able to target and attack operational, high payoff, and high-value target sets to establish and sustain obstacle belts and blocking points to fix the adversary and to reinforce follow-on ground force attacks to defeat them.

To accomplish this, the JTF establishes persistent surveillance and target acquisition over the city and deploys sufficient joint firepower assets to interdict adversary movement (particularly CSS); emplace remotely delivered obstacles; support and protect JTF ground forces conducting counter-mobility activities; and defeat adversary efforts to breach obstacles. Employment of PSYOPs, electronic, and informational attacks as well as non-lethal attacks on personnel, equipment, and installations are all key components of the JTF plan.

Air, surface, sub-surface, and special operations means deny use of routes and approaches; and prevent, hinder, or delay the use of key areas to dislocate the adversary's key support systems. Joint firepower also supports achieving city-wide positional, tempo, strength, morale, or time-competitive OODA cycle advantages (operational maneuver) over the adversary.

B.5.4 Logistics and Personnel Support

A JTF using segment and capture to control a city will be operating as part of a larger joint force. As a result, many of the tasks associated with logistics

and personnel support are fulfilled by the larger joint and component logistics infrastructure. This includes the supply of arms, munitions, equipment, fuel, maintenance, as well as the full range of force support functions. A major urban operation will likely be the JFCs main effort and the JTF commanders task is to define and articulate requirements for supporting organizations.

The JTF commander ensures robust support and services especially for ground forces committed into the city by establishing secure forward operating bases. These safe havens provide the full range of field, personnel, and health services; and facilitate the flow of casualties, training, rehearsal, and reconstitution. JTF ground forces conducting segment and capture are robust, lethal forces that are initially dispersed to establish multiple city-wide obstacle zones, lines, and blocking points. This approach requires not only secure forward operating bases but also reliable lines of communication. In the initial phases of segment and capture, JTF forces are vulnerable to being cutoff from sources of support. As the operation progresses and the adversary begins to feel the effects of being fixed and cut off from sources of support, the ability of the adversary to interdict JTF combat service support will be degraded. This advantage will be offset by the increased JTF requirement to flow forces, material, and supplies into the city to support follow-on offensive actions. JTF ground forces entering the city to establish operationally significant obstacle systems will require significant mobility, countermobility, and survivability assets.

A JTF commander using segment and capture to control a city is prepared to exploit success in all phases to conduct simultaneous consolidation and transition operations. Early re-introduction of civil support and services not only facilitates JTF control of the city but also undermines the morale and credibility of the adversary. The JTF commander has forces on standby to implement the JTF stability and support plan in potentially widely separated areas of the city as soon as they become available. Activities include the following:

- civil affairs
- civil-military operations
- coordination of political-military support
- disaster control
- foreign internal defense
- law enforcement
- prisoner control
- real estate management
- security assistance
- support to agencies
- transition to civil administration

B.5.5 Command and Control

As with the other functional areas already discussed, a JTF using segment and capture to control a city operates under the C4 policies, procedures, and infrastructure established and managed for the overall JOA.

Within his AO, the JTF commander establishes robust and redundant capabilities to acquire and communicate operational-level information ; maintain status; and assess the operational situation. Above all else, the JTF commander seeks a continually refreshed view of the effects his operations are causing on JTF forces, the adversary, the non-combatant population, and the other systems in play in the city (CCIRs). In addition to understanding the local city situation, the JTF commander also looks "out and up" to ensure his activities remain relevant to shifting theater and strategic goals, and national policy.

In addition to ensuring a reasonable capability to acquire and process information, the JTF commander also organizes his forces so that they are able to accomplish missions with less information. Decision thresholds and resources are pushed to the lowest levels, and the JTF commander accepts that he will often not know as much about local conditions as his tactical commanders will.

The JTF commander develops, approves, and issues plans and orders describing the timings, effects, and sequencing of JTF activities designed to fix adversary forces and disrupt their CSS operations. Because of the density of non-combatants and protected infrastructure within the city, the JTF ROE is carefully crafted to ensure the success of tactical activities and force protection without betraying the larger operational, strategic, and national policy interests. Because successful segment and capture achieves control of the city with fewer casualties and less infrastructure damage than traditional approaches, JTF operations are less likely to produce unintended negative consequences.

The JTF commander establishes, organizes, and operates his headquarters from one of the secure forward operating bases in his AO. A location is chosen that balances force protection and security with effectiveness.

In conducting *Segment and Capture*, the JTFs are able to integrate and control operational information operations. This gives the JTFs the following capabilities:

- the capability to enhance the dislocating effect produced on the adversary (particularly the adversary's senior decision makers), and
- the capability to either neutralize or exploit the non-combatant population.

Information Operations supports the effort for the following reasons:

- to convince adversary commanders that JTF forces have segmented the city with fixing, turning, blocking, and disrupting obstacles; and
- that their forces are separated and weakening.

JTF Information Operations also supports these activities to accomplish the following:

- to achieve city-wide advantages over an adversary, and
- to introduce operationally significant obstacles on a city-wide scale to paralyze an adversary's infrastructure.

As opportunities to implement consolidation and transition plans appear even in the early phases of segment and capture operations, the JTF's ability to coordinate and integrate joint, multi-national, and interagency support is especially important. Even before the dislocating effect of segment and capture is felt across the city-wide systems, adversary forces will begin to loose their grip on the population and on agencies that provide civil services and support. Long before the city is under the full control of friendly forces, there will be opportunities and requirements to permit exterior support and services to enter and assist the non-combatant population.

In addition to assigning tasks to forces, the JTF commander exploits this loss of adversary control on population services, and support by understanding national, multi-national, agency, and non-governmental agendas; coordinating with non-DoD, host nation, and coalition support; and introducing a relevant community relations program.

The ability to manage media relations so as to accurately portray the JTF's intentions is critical throughout segment and capture operations. *Segment and Capture* does not "look" like traditional urban operations and activities sometimes go astray of policy—the JTF commander is prepared to truthfully explain these things. Additionally, the JTF coordinates a robust command/internal information program designed to ensure personnel, especially those operating in the city or coming in contact with the non-combatant population, are fully armed with the JTF ROE, the purpose of the operation (why we are here), and commander's intent for the current activities.

B.5.6 Force Protection

A JTF using segment and capture to control a city operates as part of a larger joint force and is protected by the established theater air, space, and missile defense. Because the JTF relies heavily on remotely delivered fires to support segment and capture, it crafts both positive and procedural control measures that facilitate persistent surveillance and target acquisition over the city and employment of sufficient joint firepower assets to defeat adversary forces counterattacking JTF ground forces, or defending against subsequent decisive attacks.

Because of the density of the urban environment, JTF forces, particularly those operating on the ground and in the air over the city, will be especially vulnerable. The JTF commander plans for personnel recovery and joint search and rescue; and counters adversary deception and psychological operations. JTF ground forces sent into the city have strong countermine and mobility capabilities.

Striking an acceptable balance between protection for friendly forces, mission accomplishment, and risk to non-combatants is especially difficult within the close confines of the city. The JTF commander prepares (operationally significant) defenses and removes hazards (e.g., pollution and HAZMAT) for operational forces, their means, and non-combatants. Protecting the forward operating bases supporting segment and capture operations will be especially important. Providing counter-reconnaissance, and security of flanks, rear areas, critical facilities, systems, and LOCs may consume as many JTF forces as does the primary effort to segment and capture the city.

In conducting segment and capture, JTF forces may intentionally conduct non-combatant evacuations or be forced to by unforeseen events. The JTF

commander anticipates the effects of operations on the non-combatant population and employs evacuation in cases in which it is feasible and contributes to establishing city-wide counter-mobility and successful follow-on attacks. Because of the massive support requirements, large-scale non-combatant evacuations are generally not considered feasible.

The JTF commander conducts operational deception to support the rapid establishment of obstacle zones, belts, and points in the city and to hide the JTF intentions to not merely defend the obstacles but to attack segmented adversary forces from multiple directions. Deception also provides the following:

- encourages the adversary to expose avenues into obstacle sites,
- diverts his attention from the counter-mobility effort,
- compounds the psychologically debilitating effect of being cut off from sources of support, and
- encourages ill-timed counterattacks that make him vulnerable to JTF decisive operations.

B.5.7 Counter CBRNE Weapons

While the JTF falls under the overall theater effort to neutralize adversary CBRNE weapons, no other threat capability has the same potential to disrupt a segment and capture approach to controlling a city. The JTF commander integrates the CBRNE weapons situation into his JISR and includes information on CBRNE weapon-delivery systems, toxic industrial materials, adversary intent, and possible courses of action.

The density of the city makes it an ideal place to produce, store, deliver, and employ CBRNE weapons. If JTF segment and capture operations are successful, they will deny control of a key urban area to the adversary with dire operational and strategic consequences. Losing a key city may be so devastating a proposition to the adversary's senior decision makers that they may employ chemical, biological, radiological, nuclear, or high-yield explosives to prevent it. This is especially so the more important the city (e.g., a capital). The JTF commander understands that one of the unintended consequences of causing rapid adversary dislocation, loss of control, and disorientation is

that they might resort to CBRNE weapons in a last-ditch effort to stave off disaster.

The JTF commander coordinates with theater plans to prevent the adversary from employing CBRNE weapons and, if prevention fails, to locate hazards, take necessary protective actions, and decontaminate as necessary. Activities such as post-hostility remediation, preparing equipment for redeployment and final disposal *in situ* or removal of an adversary's residual CBRNE weapon capability are also included.

Specifically, a JTF conducting using segment and capture to control a city coordinates conventional and unconventional CBRNE counterforce operations into its plan to fix adversary forces. Indeed, CBRNE nodes are prime candidates for blocking and disrupting obstacles. Production, infrastructure, and delivery systems are targeted for both lethal and non-lethal means. The JTF commander implements active and passive CBRNE defense measures for his forces, means, critical nodes, facilities, and rear areas. Finally, as part of his consolidation and transition plan, the JTF commander coordinates support for interagency essential services and activities required to manage and mitigate damage resulting from the employment of CBRNE weapons or release of toxic industrial materials and/or contaminants. Services and activities can include the following:

- communications
- decontamination
- energy
- fire fighting
- food
- hazardous materials
- health and medical services
- information and planning
- mass care
- population evacuation
- public works and engineering
- resource support
- transportation
- urban SAR

The JTF is prepared to execute CBRNE consequence management activities at any time during operations.

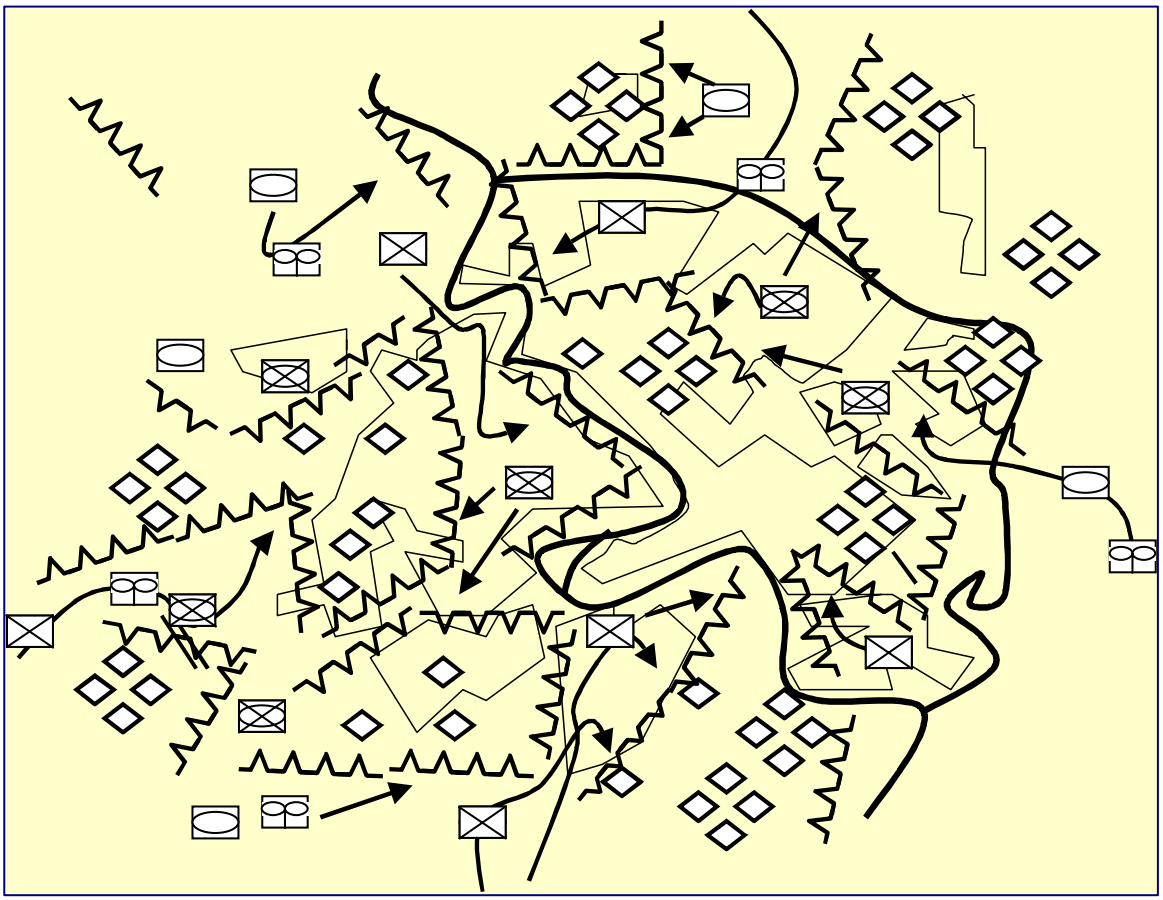


Figure 5. Segment and Capture

B.6 How the JTF Employs a Soft-Point Capture and Expansion Approach to Defeat an Adversary in a City

Soft-Point Capture and Expansion is an approach that captures undefended areas in the city and then uses them as bridgeheads for decisive, multiple attacks. It can be understood as the rapid establishment of multiple rear-area threats to the adversary force. It requires knowing where adversary forces are, are not, and how they plan to defend the city. This approach exploits non-contiguous operations and rapid maneuver to attack the cohesion of adversary forces and the minds of their commanders. Operating from the captured bridgeheads, friendly forces attack adversary forces from multiple directions. These multi-directional attacks make movement, intelligence, logistics, command and control, and force protection difficult for the threat. Adversary forces are also cut off from outside sources of supply and reinforcement. For a depiction of this concept, see Figure 6 on page 65.

B.6.1 Movement and Maneuver

A JTF using *Soft-Point Capture and Expansion* to control a city operates as part of a larger joint force. As a result, many of the tasks associated with operational movement are fulfilled by the larger joint operation infrastructure. Strategic deployment, Joint RSOI, and coordinating host-nation support are examples. Indeed, the overall JFC makes efforts to reduce the JTF workload as much as possible so he can focus on the urban operation at hand. Likewise, considerations like airspace management, air and maritime superiority, and isolating the JOA are out of the hands of an urban JTF commander. A major urban operation is likely to be the JFCs main effort and the JTF commanders task is to define and articulate requirements for supporting organizations.

Seeking to wrest control of a city from an adversary is an operational-level offensive operation. As such, the JTF commander is concerned with intra-theater deployment and redeployment so as to position sufficient forces to achieve the timings and effects required of a *Soft-Point Capture and Expansion* operation. Additionally, assembling, posturing, and transitioning forces so as to produce the key effects of rapidly establishing control of undefended ar-

eas and then attacking from those areas to complete the defeat of the adversary are vitally important activities for the JTF commander and his staff.

In developing a concept of operations along the lines of S*oft-Point Capture and Expansion*, the JTF commander first views the city as a *system of systems* in which threats are to be initially avoided to establish bases for subsequent decisive offensive operations. Suitable target soft-point areas must be relatively undefended and establish positional advantage (e.g., enable subsequent decisive operations or block adversary maneuver attempts). Timings, effects, and sequencing of JTF activities are crafted to produce the key desired effects of establishing multiple JTF ground threats in undefended areas and transforming them into bases from which follow-on attacks can be launched. To fully exploit the debilitating effects of *Soft-Point Capture and Expansion* at the city-scale, enemy strengths are sidestepped to pose devastating threats from multiple unexpected locations. Soft-Point Capture and Expansion begins to win the moment the adversary commander realizes that he has a serious city-wide rear-area threat for which his is unprepared.

The JTF commander employs the full range of activities to achieve city-wide positional, tempo, strength, morale, or time-competitive OODA cycle advantages over the adversary. Examples of such activities include the following:

- shows of force
- demonstrations
- airborne/air assaults
- raids
- penetrations
- assaults
- unconventional, and special operations

Key to success in *Soft-Point Capture and Expansion* is three particular activities:

- overcoming operationally significant barriers and obstacles,
- enhancing the movement of JTF forces, and
- imposing devastating counter-mobility.

B.6.2 ISR

In addition to producing a standard Joint IPB for its target city, JTFs conducting *Soft-Point Capture and Expansion* operations apply organic resources and request outside support specifically to identify undefended areas, feasible avenues of approach into them, and obtain a detailed understanding of the

adversary's defensive plan. This effort requires a continuously refreshed understanding of the complicated and, more often, complex adaptive military, cultural, political, historical, demographic, economic, and geographic systems in play in the city. Although obtaining complete knowledge is not possible, the probability of success is directly proportional to how well the JTF correctly performs the following:

- identifies exploitable soft-points;
- continually understands the city at least as well and preferably better than its inhabitants; and
- anticipates the reactions its defenders might employ.

To achieve these objectives, the JTF employs the full range of technical capability, multi-source information and intelligence fusion, and rapid analysis and dissemination. Employment of air and space sensors, human intelligence, imagery intelligence, signals intelligence, open-source intelligence, measurement and signature intelligence, and counterintelligence are all considered.

JTF ISR addresses non-combatants whose presence in the urban area will be substantial and dynamic. The JTF plan to achieve advantage over the adversary through *Soft-Point Capture and Expansion* includes activities to either neutralize or exploit the non-combatant population. Therefore determining the ethnic and religious composition of the population and, if possible, their intent (flee/remain, support/resist) is crucial.

B.6.3 Firepower

In conducting *Soft-Point Capture and Expansion*, the JTFs are able to target and attack operational, high-payoff, and high-value target sets to support the capture and defense of undefended sites as well as the subsequent multi-pronged offensives that will be launched from them.

To accomplish this, the JTF establishes persistent surveillance and target acquisition over the city and deploys sufficient joint firepower assets to support and protect attacking JTF ground forces, and defeat adversary counterattacks. Employment of PSYOPs, electronic, and informational attacks as well as non-lethal attacks on personnel, equipment, and installations are all key components of the JTF plan.

Air, surface, sub-surface, and special operations means deny use of routes and approaches; and prevent, hinder, or delay the use of key areas to dislocate the adversary's key support systems. Joint firepower also supports achieving city-wide positional, tempo, strength, morale, or time-competitive OODA cycle advantages (operational maneuver) over the adversary.

B.6.4 Logistics and Personnel Support

A JTF using *Soft-Point Capture and Expansion* to control a city will be operating as part of a larger joint force. As a result, many of the tasks associated with logistics and personnel support are fulfilled by the larger joint and component logistics infrastructure. This includes the supply of arms, munitions, equipment, fuel, maintenance, as well as the full range of force support functions. A major urban operation will likely be the JFCs main effort and the JTF commanders task is to define and articulate requirements for supporting organizations.

The JTF commander ensures robust support and services especially for ground forces committed into the city by establishing secure forward operating bases. These safe havens provide the full range of field, personnel, and health services; and facilitate the flow of casualties, training, rehearsal, and reconstitution. JTF ground forces conducting *Soft-Point Capture and Expansion* are robust, lethal forces that are initially dispersed in multiple undefended and separated areas. This approach requires not only secure forward operating bases but also reliable lines of communication.

In the initial phases of *Soft-Point Capture and Expansion*, JTF forces are vulnerable to being cutoff from sources of support. As the operation progresses and the adversary begins to feel the effects posed by multiple threats, the ability of the adversary to interdict JTF combat service support will be degraded. This advantage will be offset by the increased JTF requirement to flow forces, material, and supplies into captured soft points to support follow-on offensive actions. JTF ground forces capturing and operating from soft points will require significant mobility, counter-mobility, and survivability assets.

A JTF commander using *Soft-Point Capture and Expansion* to control a city is prepared to exploit success in all phases to conduct simultaneous consolidation and transition operations. Early re-introduction of civil support and services not only facilitates JTF control of the city but also undermines the mo-

rale and credibility of the adversary. The JTF commander has forces on standby to implement the JTF stability and support plan in potentially widely separated areas of the city as soon as they become available. Activities include the following:

- civil-military operations
- law enforcement
- prisoner control
- real estate management
- security assistance
- support to agencies
- transition to civil administration
- coordination of political-military support
- civil affairs
- foreign internal defense
- disaster control

B.6.5 Command and Control

As with the other functional areas already discussed, a JTF using *Soft-Point Capture and Expansion* to control a city operates under the C4 policies, procedures, and infrastructure established and managed for the overall JOA.

Within his AO, the JTF commander establishes robust and redundant capabilities to acquire and communicate operational-level information; maintain status; and assess the operational situation. Above all else, the JTF commander seeks a continually refreshed view of the effects his operations are causing on JTF forces, the adversary, the non-combatant population, and the other systems in play in the city (CCIRs). In addition to understanding the local city situation, the JTF commander also looks "out and up" to ensure his activities remain relevant to shifting theater and strategic goals, and national policy.

In addition to ensuring a reasonable capability to acquire and process information, the JTF commander also organizes his forces so that they are able to accomplish missions with less information. Decision thresholds and resources are pushed to the lowest levels, and the JTF commander accepts that he will often not know as much about local conditions as his tactical commanders will.

The JTF commander develops, approves, and issues plans and orders describing the timings, effects, and sequencing of JTF activities designed to capture undefended areas in the city, deny them to the adversary, and employ them as bases for decisive offensive operations. Because of the density of non-combatants and protected infrastructure within the city, the JTF Rules

of Engagement (ROE) are carefully crafted to ensure the success of tactical activities and force protection without betraying the larger operational, strategic, and national policy interests. Because successful *Soft-Point Capture and Expansion* achieves control of the city with fewer casualties and less infrastructure damage than traditional approaches, JTF operations are less likely to produce unintended negative consequences.

The JTF commander establishes, organizes, and operates his headquarters from one of the secure forward operating bases in his AO. A location is chosen that balances force protection and security with effectiveness.

In conducting *Soft-Point Capture and Expansion*, the JTFs are able to integrate and control operational information operations. This gives the JTFs the following capabilities:

- the capability to enhance the dislocating effect produced on the adversary (particularly the adversary's senior decision makers), and
- the capability to either neutralize or exploit the non-combatant population.

Information Operations supports the effort to convince adversary commanders that JTF ground forces have achieved positional advantage in unexpected locations from which they are capable of posing multiple threats from multiple directions.

JTF Information Operations also supports these activities to achieve the following:

- to gain city-wide advantages over an adversary, and
- to introduce operationally significant obstacles on a city-wide scale to paralyze an adversary's infrastructure.

As opportunities to implement consolidation and transition plans appear even in the early phases of *Soft-Point Capture and Expansion* operations, the JTF's ability to coordinate and integrate joint, multi-national, and interagency support is especially important. Even before the dislocating effect of *Soft-Point Capture and Expansion* is felt across the city-wide systems, adversary forces will begin to loose their grip on the population and on agencies that provide civil services and support. Long before the city is under the full con-

trol of friendly forces, there will be opportunities and requirements to permit exterior support and services to enter and assist the non-combatant population. In addition to assigning tasks to forces, the JTF commander exploits this loss of adversary control on population services, and support by understanding national, multi-national, agency, and non-governmental agendas; coordinating with non-DoD, host nation, and coalition support; and introducing a relevant community relations program.

The ability to manage media relations so as to accurately portray the JTF's intentions is critical throughout. *Soft-Point Capture and Expansion* operations. *Soft-Point Capture and Expansion* does not "look" like traditional urban operations, and activities sometimes go astray of policy—the JTF commander is prepared to truthfully explain these things. Additionally, the JTF coordinates a robust command and/or internal information program designed to ensure personnel, especially those operating in the city or coming in contact with the non-combatant population, are fully armed with the JTF ROE, the purpose of the operation (why we are here), and commander's intent for the current activities.

B.6.6 Force Protection

A JTF using *Soft-Point Capture and Expansion* to control a city operates as part of a larger joint force, and is protected by the established theater air, space, and missile defense. Because the JTF relies heavily on remotely delivered fires to support *Soft-Point Capture and Expansion*, it crafts both positive and procedural control measures that facilitate persistent surveillance and target acquisition over the city and employment of sufficient joint firepower assets to defeat adversary forces counterattacking JTF ground forces, or defending against subsequent decisive attacks.

Because of the density of the urban environment, JTF forces, particularly those operating on the ground and in the air over the city, will be especially vulnerable. The JTF commander plans for personnel recovery and joint search and rescue; and counters adversary deception and psychological operations. JTF ground forces sent into the city have strong countermine and mobility capabilities.

Striking an acceptable balance between protection for friendly forces, mission accomplishment, and risk to non-combatants is especially difficult within the close confines of the city. The JTF commander prepares (operationally sig-

nificant) defenses and removes hazards (e.g., pollution and HAZMAT) for operational forces, their means, and non-combatants. Protecting the forward operating bases supporting *Soft-Point Capture and Expansion* operations will be especially important. Providing counter-reconnaissance, and security of flanks, rear areas, critical facilities, systems, and LOCs may consume as many JTF forces as does the primary effort to capture and expand from key nodes in the city.

In conducting *Soft-Point Capture and Expansion*, JTF forces may intentionally conduct non-combatant evacuations or be forced to by unforeseen events. The JTF commander anticipates the effects of operations on the non-combatant population, and employs evacuation in cases in which it is feasible and contributes to establishing JTF forces in firm control of undefended areas and successful follow-on attacks. Because of the massive support requirements, large-scale non-combatant evacuations are generally not considered feasible.

The JTF commander conducts operational deception to support the rapid capture of undefended areas in the city and to hide the JTF intentions to not merely defend from those sites but to use them as bases for multiple attacks. Deception also provides the following:

- encourages the adversary to expose avenues into undefended areas,
- diverts his attention from the true targets of attack,
- compounds the psychologically debilitating effect of being faced with multiple threats from areas that had been considered secure, and
- encourages ill-timed counterattacks that make him vulnerable to JTF decisive operations.

B.6.7 Counter CBRNE Weapons

While the JTF falls under the overall theater effort to neutralize adversary CBRNE weapons, no other threat capability has the same potential to disrupt a *Soft-Point Capture and Expansion* approach to controlling a city. The JTF commander integrates the CBRNE weapons situation into his JISR and includes information on CBRNE weapon-delivery systems, toxic industrial materials, adversary intent, and possible courses of action.

The density of the city makes it an ideal place to produce, store, deliver, and employ CBRNE weapons. If JTF *Soft-Point Capture and Expansion* operations are successful, they will deny control of a key urban area to the adversary with dire operational and strategic consequences. Losing a key city may be so devastating a proposition to the adversary's senior decision makers that they may employ chemical, biological, radiological, nuclear, or high-yield explosives to prevent it. This is especially so the more important the city (e.g., a capital). The JTF commander understands that one of the unintended consequences of causing rapid adversary dislocation, loss of control, and disorientation is that they might resort to CBRNE weapons in a last-ditch effort to stave off disaster.

The JTF commander coordinates with theater plans to prevent the adversary from employing CBRNE weapons and, if prevention fails, to locate hazards, take necessary protective actions, and decontaminate as necessary. Activities such as post-hostility remediation, preparing equipment for redeployment and final disposal *in situ*, or removal of an adversary's residual CBRNE weapon capability are also included.

Specifically, a JTF conducting using *Soft-Point Capture and Expansion* to control a city coordinates conventional and unconventional CBRNE counterforce operations into its shaping plan. Production, infrastructure, and delivery systems are targeted for both lethal and non-lethal means. The JTF commander implements active and passive CBRNE defense measures for his forces, means, critical nodes, facilities, and rear areas. Finally, as part of his consolidation and transition plan, the JTF commander coordinates support for interagency essential services and activities required to manage and mitigate damage resulting from the employment of CBRNE weapons or release of toxic industrial materials and/or contaminants. Services and activities can include the following:

- population evacuation
- decontamination
- transportation
- communications
- public works and engineering
- fire fighting
- information and planning
- mass care
- resource support
- health and medical services
- urban SAR
- hazardous materials
- food
- energy

The JTF is prepared to execute CBRNE consequence management activities at any time during operations.

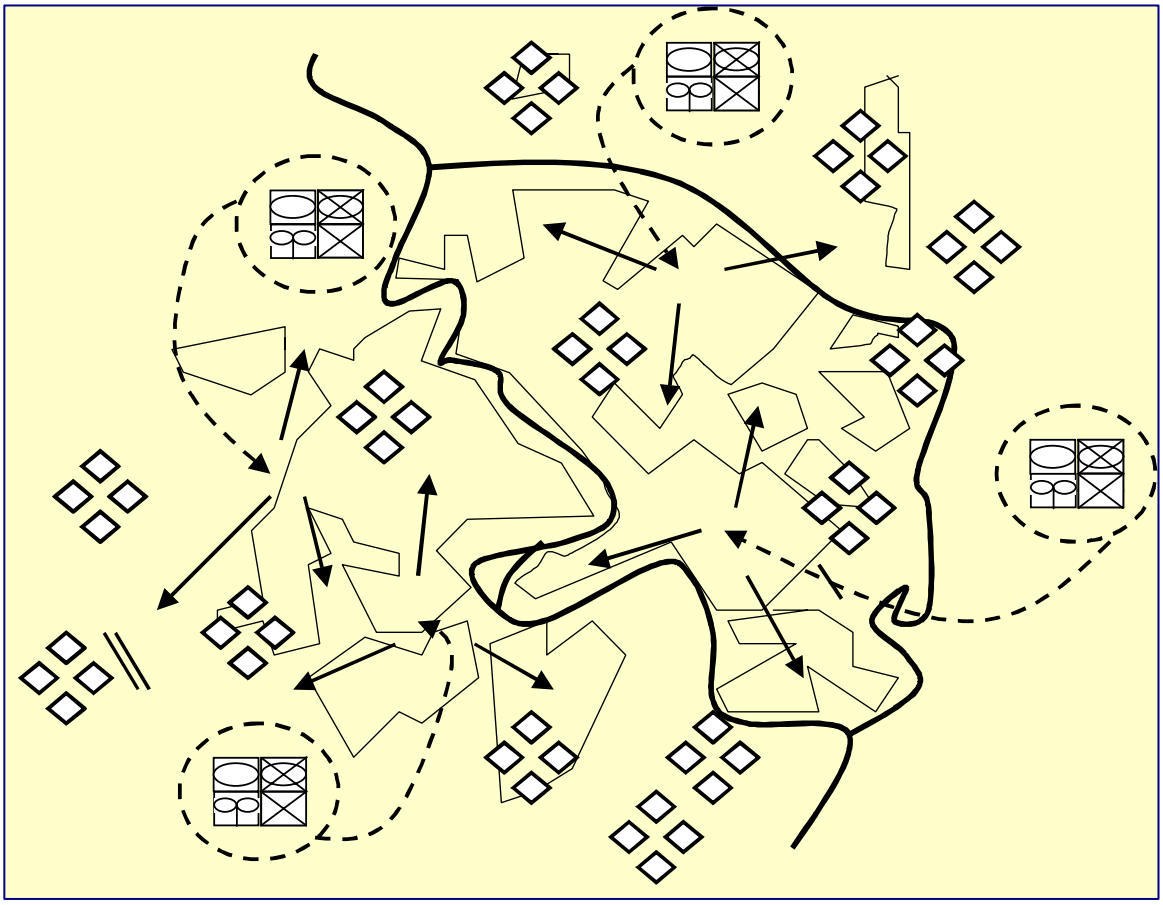


Figure 6. Soft-Point Capture and Expansion

Appendix C. War Game I

A Blue Team
Nodal Isolation Outbrief

Nodal Isolation Outbrief

- **Blue Mission: (statement of the task and purpose)**

  JTF Urban attacks Red Capital City in order to eliminate remaining Red government and military resistance, to control the city and associated national infrastructure, to reduce civilian suffering, and to facilitate transition to stability and support operations

- **Blue Intent: (method (related to CONOPS being explored) and end-state)**

  Overwhelm the regime through nodal isolation of Gov/Mil infrastructure by isolating enemy forces, communication

  Overwhelming the government and galvanizing the **Shia** populace

Concept of Operations

- Major force allocations and timing decisions
  - Three-Phase Operation
    - PH 1: PsyOps/Shaping
      - Isolate Comm, Power (Nodes Identified)
      - Isolate Northern Food Distribution Centers
      - Identify/Target Remaining Red Forces
    - PH 2: Emerging/Hard Targets
      - Identify/Destroy WMD/Arty/Comm/HQ
    - PH 3: Forcing Function
      - Isolate Remaining Gov/Mil Forces
      - Central District

PH 1: PsyOps/Shaping (1)

Method:

- Simultaneous three brigade strike with insertion of SOF into key locations in the city to conduct a robust I/O and PsyOps campaign and shape the battlespace for future actions:
  - Key node isolation
  - Cell phones/radio/leaflet drops
  - Use of loudspeakers
    - Humanitarian theme to people
    - “We will kill you” theme to Red force
    - Serious emphasis on the use of WMD

PH 1: PsyOps/Shaping (2)

Purpose:

- Galvanize the Shia
- Influence food distribution sites creating undesirable/distracting large movement of people and confidence among Shia
- Create communication problems for red force
- Encourage Red not to use WMD

End State:

- Solidify cooperation East of the Tigris River and to locate unknown Red forces

PH 2: Identify/Isolate/Destroy Hard Targets

Method:

• Direct action by SOF/remote fires and continued PsyOp

Purpose:

• Galvanize the Shia
• Eliminate WMD and means to deliver them
• Destroy Red force means to communicate

End State:

• Demoralized Red force and weakened central district

PH 3: Forcing Function

Method:

- Four Brigade thrusts from the South and West

Purpose:

- Physically isolate the final Red forces in a confined area within the central vicinity of the city

End State:

- Isolate Red force leader (has no influence)

Assessment of Risk (or Risk Mitigation)

- Assessment of risk (or risk mitigation)
  - Lose PR Campaign/ CNN /Al-Jazeera Factor
  - Lack of Capitulation (Iwo Jima Scenario)
  - WMD
  - Long Campaign/Troop Morale on Blue Force
- Highlight of CCIR / PIR
  - WMD Location
  - Red Force Location/ Intention
  - Ethnic Population/Tensions
  - Red Force Leader Location?

Major Considerations & Concerns (1)

- Understand
  - Physical Battlespace – ISR assets/nodal points
    - Extend sensor web (UAV-emerging tech)
  - Population loyalty/ethnic tensions
  - Regular Army loyalty
  - Command infrastructure
  - Understanding blue force morale

Major Considerations & Concerns (2)

- Shape
  - Physical battlespace- PsyOps and Nodal Isolation (comms., power)
  - Population shifts/ defined loyalties – collaborators
  - Red forces locations - WMD
  - Blue forces key locations surrounding city
- Engage
  - Weapon delivery to isolate nodes
    - Remote fires(armed UAV, manned A/C, Artillery, TLAM)
  - Weapon Effects - Hard Kill, Soft Kill
  - Information Ops, Psyops

Initial Takeaways

- Nodal Isolation alone cannot achieve the JTF desired end state
- Utilizing Nodal Isolation may reduce collateral damage and minimize troop presence
- Under USECT, often “S” actions require “E” actions. The use of tactical engagement to shape strategic/operational actions is an example

Appendix D. War Game II

Blue Team A Outbrief

RCC's Mission

- When directed by the NCA, COMBLUE will conduct Joint/multinational military operations in order to destroy all means to produce and employ WMD, create an environment for immediate UN/ International support to begin re-construction of Red and prepare for the establishment of interim government.

RCC's INTENT

- Purpose: My intent is to establish an interim government in Red, destroy all means to build and employ WMD, and to create an environment for UN/International relief agencies to operate. This will be accomplished using all elements of national power in conjunction with international efforts.
- Method: We will rapidly build up military combat power in the area to ensure initial force protection. This build up will occur in points to the south, south west, and north, to include forces at sea. I see the enemy force's Center of Gravity (COG) as the Special Republican Guard and the top seats of Governmental Leadership. We will neutralize his COG by attacking his critical vulnerabilities: weak economy, poor infrastructure, weak military forces to the south and north, and his inability to coordinate. We will attack and destroy the enemy's command and control network, AAA/SAM sites and TELs, sea-mine field locations, lines of communications (LOCs), and WMD sites, to include immediately isolating Baghdad from forces trying to retreat to the comfort of the urban environment. Our rapid destruction of enemy forces combined with our mobility should lead to the overthrow and collapse of the SRG and the top leadership. However, we need to be prepared to conduct urban operations in the capital city.
- Endstate: Success is when the current leadership of Red is no longer in power and we control Red, to include natural resources, major infrastructure, and the capital city.

JTF-U Mission

- JTF Urban attacks Red Capital City in order to eliminate remaining Red government and military resistance, to control the city and associated national infrastructure, to reduce civilian suffering, and to facilitate transition to stability and support operations.
- Endstate: internationally accepted interim government of Red in place with enough basic infrastructure to begin governmental transition.

Concept Analysis

- Considered all 6 approaches
- Evaluated Strengths/Weaknesses
- Sought combination of approaches to meet RCC Intent & JTF priorities
- Sought to create psychological defeat through speed and shock
  - Focus on SRG COG
    - Source of strength for Red regime
  - Attack from unexpected vectors
- Sought to preserve infrastructure for transition and minimize collateral damage and civilian casualties

Analysis Criteria

- Speed
- Defeat Mechanism
- Risk Analysis
  - Causalities/boots on ground
  - Vulnerabilities/Force protection
  - Collateral damage
- ISR Requirements
- Population Response
- Ease of Transition

Segment and Capture

Advantages

- Paralyze and disintegrate Red forces
- Focus power on small area, accelerated transition in low threat areas
- Accommodates limited ISR abilities

Disadvantages

- Time-intensive
- High number of forces on ground and in city
- Higher casualties/collateral damage likely

Soft Point Capture and Expansion

- Advantage
  - Allows for negotiation with Red
  - Easier to insert forces
- Disadvantage
  - Delays engaging COG

Nodal Capture

- Advantage
  - Denies Red positive control of node and allows Blue control
- Disadvantage
  - Requires boots on ground
  - May not be decisive

Nodal Isolation

- Advantage
  - Denies Red forces source of strength with few boots on ground
- Disadvantages
  - Not a source of strength for blue
  - Not a decisive method
  - Best used an enabler
  - Can have negative effect on population if for extended duration

Precision Strike

- Advantages
  - Little to No boots on ground
  - Quick/accurate
- Disadvantages
  - ISR intensive
  - Collateral damage
  - Does not exercise control on a node rather destroys it

Nodal Capture and Expansion

- Advantages
  - Rapid means for achieving early dominance
  - Allows for rapid transition to other phases
  - Reduces US troop requirements and minimizes negative cultural impacts
- Disadvantages
  - Possible difficulties in integrating Red personnel at tactical levels
  - Logistically challenging
  - Complexity

Priorities

- Inhibit/Interdict Red communications to population
- Isolate Red C2 to Forces
- Seize and protect vital infrastructure
- CCIR – WMD sites, SRG locations, C2, other critical nodes

Main Effort of Phase I

- Main effort
  - Psyops/IO
- Supporting effort
  - JISR
  - WMD targeting and response preparations

Phase I: PSYOPS/ Information OPS

- Initiate with beginning of hostilities
- Continues through all phases
- Focus on shaping the battle space
- Recruiting and training of turned Red forces by SOF units

Main Effort of Phase II

- Air assault on SRG HQ
- Supporting efforts
  - Assaults on two airfields
  - Capture of critical infrastructure
  - Be prepared to take down WMD sites

Phase II: Attack on SRG COG and Airfields (capture of vital infrastructure)

- Operate under hours of darkness
- H- 3hr JSEAD
- H- 15min Employ EMP/IO on TV/Radio(15*, 17*), Power, Phones
  - Continuous EMP/IO against Comm Bn
- H Hour STRONG/DECISIVE Precision Strike on SRG -- HQ and Airfields
  - AC-130's on station
- H+1 Nodal Capture
  - Air Ground Assault on SRG HQ -1 Brigade
  - MEF attacks to seize East Airport

Phase II: Attack on SRG COG and Airfields (capture of vital infrastructure)

- H+2 Air Ground Assault attacks to seize Saddam Airport
  - Army Mech Brigade link with Air Assault
- H+4 Nodal Capture and Control
  - Air assault w/remote fire cover
    - Power (nodes 12*, 38)
    - Water (nodes 10*, 23*, 31*)
    - Telephone (nodes 4, 5, 7, 18*, 32*)
    - Food (nodes 1, 3, 21*, 24)
    - Bridges – isolated with AC-130 fire

Phase II:Attack on SRG COG and Airfields (capture of vital infrastructure)

- H+6 to H+36 Consolidation of forces
  - Locate and secure WMD Threats (SOF)
  - Secure MSR with ground force link-up
  - Establish/enforce curfew
- H+7 – continuous public broadcast on all media on situation and civil service information

Main Efforts of Phase III

- Expansion of control of city
- Supporting Effort
  - Targeting pockets of resistance
  - Enhanced control of city using MSR's and TCP's
  - Be prepared to deal with WMD/ consequence management

Phase III: Expansion

- Combined Presence Ops
  - Protection of LOC's
  - Manning of Police stations/ Civil Control
  - Facilitate NGO /IO/HA Operations
    - Stage from Airfields
  - Secure Key MSR intersections
    - Motorized Mech forces S, SW approaches
    - MEF East approaches
- Continued targeting/attack of resisting SRG/RG forces
  - Daytime remote fire support
  - Use law enforcement approach – "Apprehending Criminals"

Main Effort of Phase IV

- Transition
  - Continuity of civil services and law enforcement
- Supporting Efforts
  - Eliminate pockets of resistance

Phase IV: Transition

- Transition Key Nodes to Civil Gov't Control
  - Continued interagency cooperation throughout
  - Provide secure environment for NGO/Intl Org activities
  - Assist new gov't in assuming LE function
- IO campaign emphasizes return to normalcy

Why Successful?

- Strengths (concept/approach)
  - Quick/decisive/shock effect through devastating/accurate precision strike and rapid vertical envelopment in mass…unanticipated by enemy
  - Compressed time line minimizes military and civilian casualties
  - Collateral damage was limited to government infrastructure
  - Focuses on attacking SRG COG
  - Removed critical control nodes from leadership to demonstrate lack of control
  - “On Call” air mobile units and linking ground forces provide maximum flexibility to deal with unknowns
  - Most weaknesses can be mitigated through TTP and rehearsal

Weaknesses (Concept/Approach)

- Friendly losses ~ quality of IPB
- Relies on significant helicopter lift capability
- Helicopter vulnerability to small arms fire/terrain/wires
- Process for integrating turned forces not well defined
- Sustainment of dispersed forces relies on timeliness of ground force link-up
- Ability to process and rapidly disseminate HUMINT
- Relies on uninterrupted C4ISR

Wargame II

- Conclusions
  - Nodal capture and expansion is a viable method
  - More effort is required to develop capabilities for nodal capture
  - Shortfall in ability to respond to mass casualties in a contaminated urban environment

Wargame II

- Next Steps
  - Develop greater range of TTP's for nodal capture/expansion
  - Expand thinking (process and TTP's) for integrating enemy forces
  - PGM supply
  - Future ACTD focus
    - Soft kill systems and capabilities
    - Night air resupply methods
    - Non lethal incapacitation methods

Appendix E.
War Game II Blue Team B Outbrief

IDA/JAWP
Joint Urban Operations War Game II

Team B

7/23/2004

Members

- Lt Col Schaal
- CMDR Pease
- Maj Arantz
- Lt Col Cohen
- Jeff Jaworski
- Joel Resnick
- John Anderson
- Col Bean
- Lt Col Hallengren

2/6/2004

RCC's MISSION

WHEN DIRECTED BY THE NCA, COMBLUE WILL CONDUCT JOINT/MULTINATIONAL MILITARY OPERATIONS IN ORDER TO DESTROY ALL MEANS TO PRODUCE AND EMPLOY WMD, CREATE AN ENVIRONMENT FOR IMMEDIATE UN/INTERNATIONAL SUPPORT TO BEGIN RE-CONSTRUCTION OF RED, AND PREPARE FOR THE ESTABLISHMENT OF INTERIM GOVERNMENT.

RCC's INTENT

- **Purpose:** My intent is to establish an interim government in Red, destroy all means to build and employ WMD, and to create an environment for UN/International relief agencies to operate. This will be accomplished using all elements of national power in conjunction with international efforts.
- **Method:** We will rapidly build up military combat power in the area to ensure initial force protection. This build up will occur in points to the south, south west, and north, to include forces at sea. I see the enemy force's Center of Gravity (COG) as the Special Republican Guard and the top seats of Governmental Leadership. We will neutralize his COG by attacking his critical vulnerabilities: weak economy, poor infrastructure, weak military forces to the south and north, and his inability to coordinate. We will attack and destroy the enemy's command and control network, AAA/SAM sites and TELs, sea-mine field locations, lines of communications (LOCs), and WMD sites, to include immediately isolating Baghdad from forces trying to retreat to the comfort of the urban environment. Our rapid destruction of enemy forces combined with our mobility should lead to the overthrow and collapse of the SRG and the top leadership. However, we need to be prepared to conduct urban operations in the capital city.
- **End state:** Success is when the current leadership of Red is no longer in power and we control Red, to include natural resources, major infrastructure, and the capital city.

Mission Statement

When directed by the President or Secretary of Defense, JTF Urban conducts joint/multinational military operations against Red Capital City in order to remove hostile Red government and military/paramilitary resistance, to control the city and associated national infrastructure, to reduce civilian suffering, and to create a stable environment for immediate UN/International support to facilitate transition to peacetime government. Eliminate Red's capability to build and/or employ CBRNE weapons. Be prepared to conduct NEO.

End State: Internationally accepted Interim government friendly to the US Government in place with enough basic infrastructure to begin government transition. Ability to build and employ CBRNE destroyed.

Methodology

- Diplomatic
  - Show international resolve
  - Reduce diplomatic ties
  - Win support of allies and friends
  - Conduct NEO
- Economic
  - Seize property in United States
  - Restrict corporate transactions
  - Enact trade sanctions
  - Freeze international assets
- Informational
  - Open dialogue with press
  - Heighten public awareness

Military Tasks

- Specified
  - Destroy government (regime change)
  - Destroy WMD
- Essential
  - IDP housing/subsistence
  - Food/water/supplies to city residence
  - Transition to peace time government friendly to US
  - Humanitarian assistance
  - Safe environment for CA
  - Positive CNN effect

Restrictions

- Minimum collateral damage
- Commanders may seize, occupy, and defend religious and culturally sensitive sites. Destruction required JTF-U/CC approval
- Segregate and move out of the city all members of the military, government, or key personnel captured or detained
- Destruction of Special Citizen Security areas requires JTF-U/CC approval
- Inherent right of self defense
- Use of non-lethal agents are allowed

Assumptions

- Blue forces control all red movements in and out of city
- Humanitarian Assistance camps in North, South, and West
- NGOs/PVOs/IGOs in country and functioning
- Iraqis LNOs helping Blue Forces
- Shia neutral
- Sunni population will actively resist
- People in city will not or can not leave
- Sympathizers provide information to Blue Forces

Shortfalls

- High Altitude UAVs
- Ability to Jam radio/TV signals and rebroadcast own signal
- SAR
- C2 Relays and/or platforms
- SIGINT/ELINT platforms
- Hospital
- CBNRE Element

RFI/EEFI/CCIR

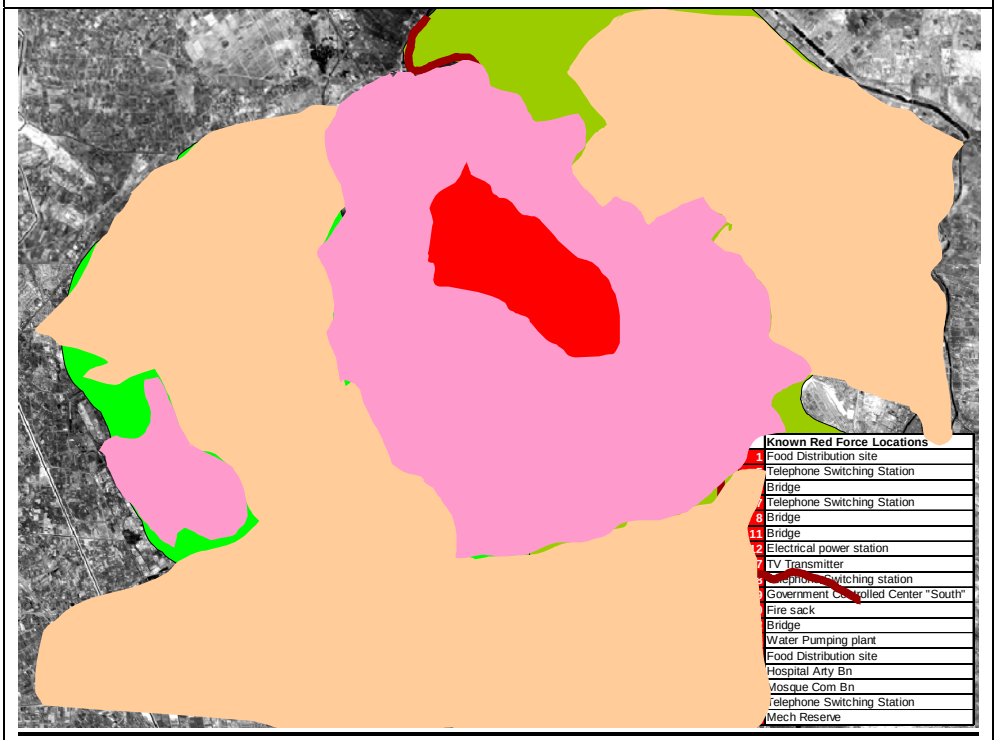
- Special Command Locations
- Special Citizen Security Areas
- CBNRE locations
- Movement of key leadership
- “Cronies” Network
- COG/Nodal Analysis (JWAC Analysis)
- Movement of Mercedes
- Location of SAMs and air defense locations
- Location of C2 nodes
- SRG/RG/Paramilitary forces
  - Armor, artillery, APC

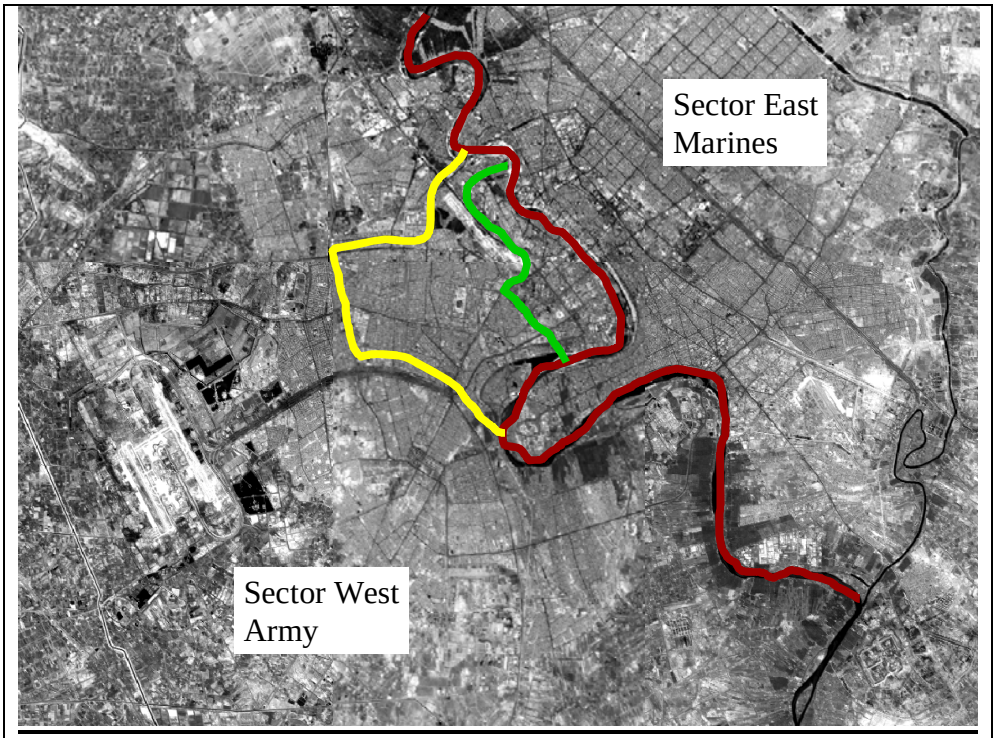
Time Sensitive/Critical Targets

- Key Military/Government Leadership
- Movement/storage locations of CBRNE
- SRM/MRM launch sites

Situation and Characteristics of Area of Operations

4/25/2003





IDA

Joint Advanced
Warfighting Program

Course of Action

4/25/2003

Segment and capture

Counter mobility/Defeat forces

<u>Advantage</u>:

Divide and conquer

Defeat piecemeal

Offensive in nature

Allows mass if needed

Segments significant logistics/MSR/and possible red force massing towards the COG

<u>Disadvantage</u>:

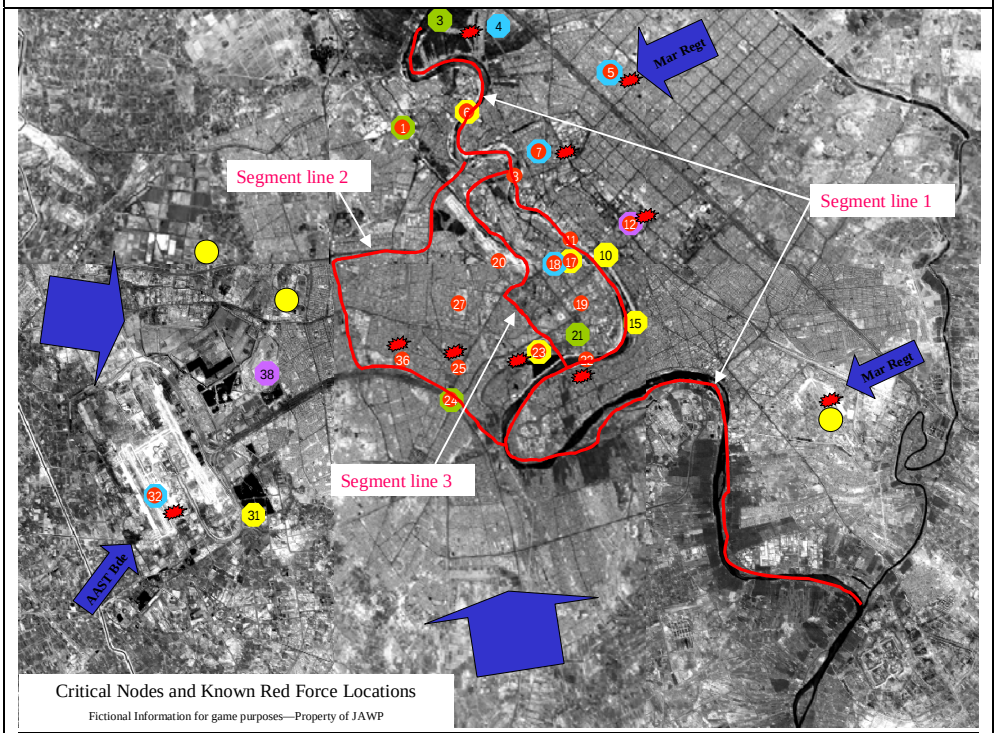
Force intensive if required.

Increased needs for force protection

Increased LOC's

Increased collateral damage (maybe)

Increased risk of losing nodes to sabotage



Critical Nodes and Known Red Force Locations

Fictional Information for game purposes—Property of JAWP

Intel Prep of Battle space (U in USECT)

- Increase ISR (ELINT/SIGINT/IMINT/MASINT/HUMINT)
  - EOB/GOB/AOB
  - Key Infrastructure and Leadership JWAC Analysis
- Information Operations
  - CP/CA (network analysis, control mechanisms)
  - Tactical deception of game plan
  - PSYOPS (target different groups with different messages—leaflet, TV, radio, Telephone, email)
  - Message of Red Actions to World
  - Strong Public Affairs action
- Special Forces (gain access to restricted sites (e.g., fiber optics)
- Prisoner interrogation/sympathizers

Segment and Capture (S in USECT)

See chart

Decisive Engagement (E in USECT)

See chart

Branches/Sequels

- Population not friendly to forces
- Population/forces raise up against Red government
- Citizens flow from city vice stay

Battle Synopsis

4/25/2003

Strengths (concept / approach)

- Low casualties
- Effects based
- Flexibility
- Reduces the urban conflict region
- Economy of force
- Allowed real time ISR collection to effect battle
- Denies massing
- Minimizes engagement with elite forces
- CA/HA efforts maximized
- Segmenting simplifies C2 for Blue, complicates for Red
- Controls large portion of non-combatants
- Logistics/sustainability

Weaknesses (concept/approach)

- Time intensive
- Physical limitation of segmentation lines
- Ability to maintain segment line
- Requires extensive ISR
- Consequence management
  - CBRNE accidents/force allocation
  - Hostile IDP flow

Overall Conclusions:

- Viable concept
- Neglected the interaction of JTF commander and his higher: Relationships and other JTF's operating under the RCC

Next Steps

- Capabilities Required
  - Depending on porous objectives of segment lines, new technology required (non-lethal area denial, non-lethal kinetic, multi-functional weapons covering personnel through armor)
  - Team of experts that know how to do a specific method
  - Persistent Surveillance
  - Communication/geoposition capabilities in urban canyons
  - Rapid precision guided weaponry
  - Examine the actual organization of forces that are organic to a combat unit

Recommendations

- **Relative to concepts:**
  - Definitions need to be better defined. This was previously segment and capture/isolate. What is the real definition of segment, can it include isolate? Is sectoring a part of this concept (Webster has it a part of the definition)?
  - This is a shaping concept that requires additional action, opens new options
  - Capture and isolation are decisive sections-engagement
    - Explain how USECT applies to concept
    - Boots on ground does not equal capitulation
- **Relative to overarching approach:**
  - red team involvement needs to be two-fold (blue campaign development, then red teaming operations with white cell mediation in deliberate steps)
  - Phases should define a start point, end state (vice specific time); they can overlap.
  - Give Intel updates to allow adjustment to plans during game play and help develop the concepts.
  - Minimize drive by shootings.
  - The game level should reflect the resources allocated to game

Recommendations

- **Relative to *future* JAWP war gaming:**
  - Consider different formula for team divisions (e.g., 90% military one group, 90% civilian other group) We may bias toward "where we sit, is where we stand"
  - Maybe we should scale the city to a generic city with no link to reality to develop concepts

Questions

Backup

4/25/2003

Joint Advanced
Warfighting Program

Mission Analysis

4/25/2003

Nodal Capture as a defeat mechanism

Advantage:

- Shock
- Resolution
- Control of Nodes

Disadvantage:

- Multi Nodes
- Increased force
- Increased risk
- Logistics
- Increased force protection
- Risk destruction of the node
- Defensive in nature

Nodal Capture and Expansion as a defeat mechanism: Strong possibility!

Advantage:

- Island for logistics
- Base camp system
- Control key nodes
- Offensive in nature
- Plans to our advantage: as an offensive force by nature…

Disadvantage:

- Expansion problems
- Increased logistics
- Increased force protection
- Increased risk
- Large force requirement
- Overall sustainment issues
- Multi node plans
- Risk destruction of the node

Soft Point and Expansion as a defeat mechanism: Possible!

Advantage:

- Get into an undefeated place
- Logistics base
- Psychological effects
- Surprise
- Force movement

Disadvantage:

- Key nodes left intact
- Future from desired point
- Bad soft point
- Multi node
- Sustainment
- Increased risk
- Force protection
- Takes longer for effects to develop

Nodal Isolation: Not a defeat mechanism

Advantage:

- Minimum force on the ground
- Reduced logistics
- Minimal force protection

Disadvantage:

- Minimum force on the ground
- Hard to do
- Required increase Intel
- Increase risk of failure
- No control of recourses
- Increased collateral Damage
- Doesn't show political resolve

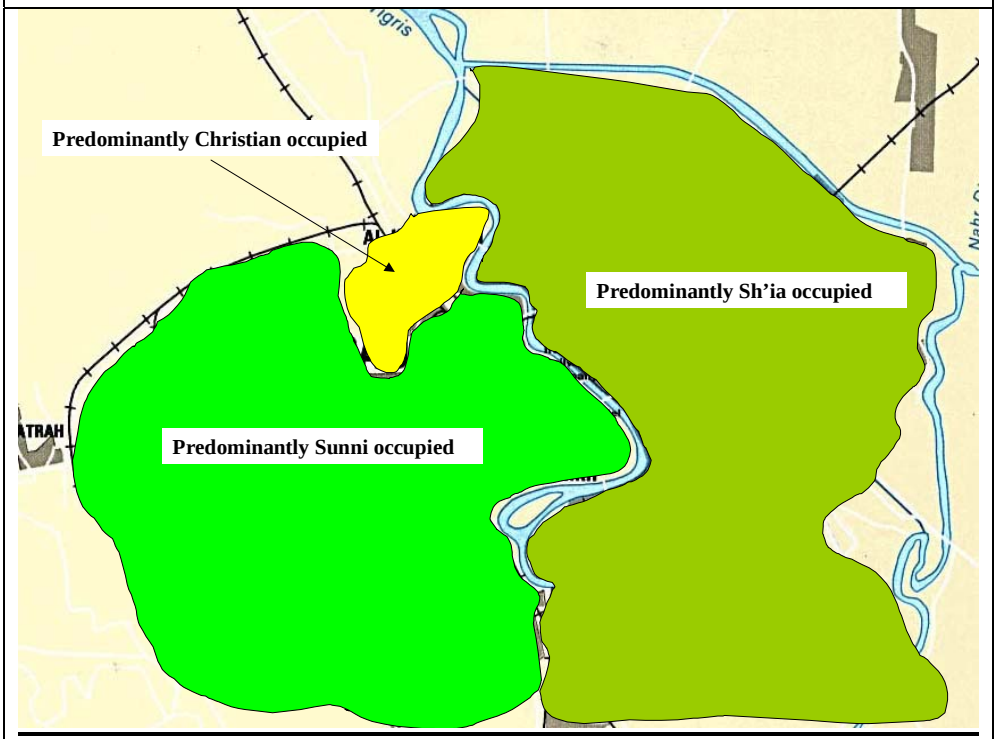
Precision Strike: Possible

Advantage:

- Minimum forces on the ground
- Reduced logistics requirement
- Increased force protection
- Fits competing Objectives to end state

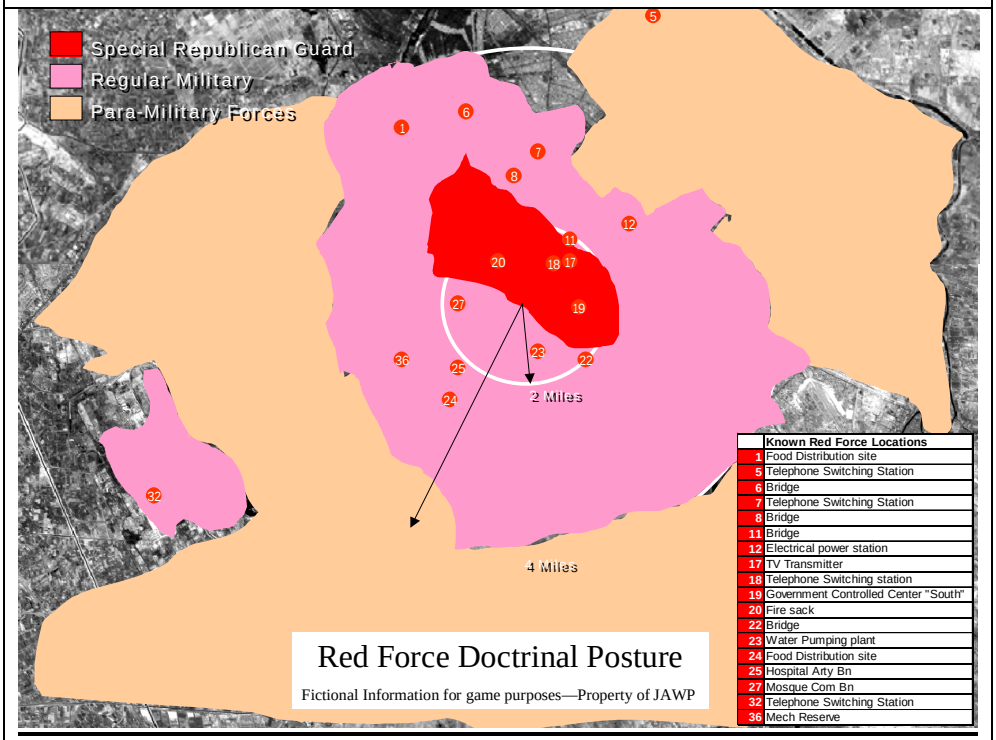
Disadvantage:

- Collateral damage
- Increased Intel
- Time oriented, the longer it goes the more it appears like attrition warfare
- 47 days of war have not provided a desired effect
- Precision strike has some serious problems. Without a significant ONA/DIME analysis, which may never be totally achievable, relying on precision strike alone. EBO is not yet developed as a current force application
- We only have a 50% picture on enemy forces and we have no idea what effect precision strike will have on non-combatants.



Enemy Forces and Doctrine

4/25/2003



Elite Military Forces Special Republican Guard (SRG) "Golden Division"

• **Responsible to protect the president and provide military response to any attempt at rebellion or coup**. Among other things, security of Baghdad, Palaces, and other vital facilities.
• The **only significant military unit allowed in Central Baghdad** except intelligence services.
• Largely recruited from Saddam's al-Bu Nasir tribe and tribes closely associated with al-Bu Nasir tribe. Recruited from Tikrit, Baiji, al-Shargat and small towns around Baghdad.
• **Paid higher salaries and have priority on basic needs** such as food and prescription drugs.
• The Special Republican Guard has combined forces with the Special Security to protect Saddam – forming the Organization of Special Security (OSS)
• The SRG has been the center of dispute between Saddam and UN weapons inspectors throughout the 90's. It is believed that SRG facilities have been the hiding places for Iraq's WMD.
• As of 2002 the SRG is estimated to include 12,000 troops, some armor, air defense and artillery units.

Secret Police Forces General Security Forces

• The main security body of the state and the oldest in the country.
• Headed by a member of the Tikriti clan.
• Has wide authority concerning political and economic activities defined as crimes, including smuggling and disloyalty or opposition to Saddam's regime.
• Headquartered in Central Baghdad.
• Roughly 8,000 strong.

Secret Police Forces
- Amn Al-Khass
- Mukhabarat
- General Security Service
- Military Security Service

Regular Military Forces

• The corps is the operational headquarters for the Red Army.
• Iraq has 5 regular army corps.
• The corps bears the responsibility for administration and logistics as well as combat operations.
•The corps normally controls 3 to 4 x divisions.
• The regular army has three basic types of divisions: armored, mechanized infantry, and infantry. Each division has 3 x maneuver brigades, divisional artillery, and various combat support and combat service support organizations.
•The total strength of the Red Army is not exactly known, but it is believed to be roughly 350,000. Since the Gulf war, the Red military has slowly eroded. For example, it is estimated that 40-50 percent of all mechanized/armor assets are non-operational due to chronic maintenance problems created by a lack of parts.

Para-Military/Irregular Forces
"People's Army" *Al Jaysh ash Shaabi*

• The peoples army consists of a popular militia composed of civilian volunteers to protect the Ba'ath regime against internal opposition and to serve as a power base to the regular army.
• The peoples army are headquartered in Baghdad with representation in Red's 18 administrative provinces – not provinces controlled by Kurdish forces.
• Each district has one commander with numerous sectors. Each sector has one commander and as many as 10 "bases", each led by a platoon commander. Each base has roughly 10 x squads with 10-15 men each.
• Personnel are assigned to squads based on their residences, to ensure swift mobilization.
• Training is conducted by the regular army to include: physical training, use of arms (mainly small arms), obstacle crossing (focusing on minefield clearing), assaults on enemy positions, searches in mountainous terrain, and some "bases" trained in air assault for use as popular army commandos.
• As part of this force, Saddam has established a group called "Saddam's Cubs" for children between the ages of 5-7. Indoctrination into the Ba'ath party and early exposure to small arms usage is the primary function. Forty percent of Red population is 25 years or younger.

Red Force Defensive Doctrine

- Establish a belt defense (co and bn size units)
- Establish layered defense of city approaches (co and bn strong-points with mobile reserve)
- Defend critical nodes (co and bn) in all sectors with the highest priority.
  - If defeated, destroy the "node": Poison food, burn infrastructure, contaminate water etc.
  - Mix security services with population at designated locations: Using women/children to their advantage in regards to our ROE and international opinion.
- Military logistics will be interspersed with non-combatant substances to include storage and distribution.
- Delay, inflict maximum casualties, and create international support for negotiations and agreement "short" of regime change.

Friendly Forces

Blue Forces

Joint Force HQ	ARFOR	MARFOR
2nd Army Corps (Hvy)	8th Inf Div (Mech)	9th MARDIV
COSCOM +	15th Inf Div (Lt/Med)	12th MAW
	200th AAST Div (2 Bdes)	5th FSSG
	179th Bde (Abn)	
	100th MP Bde	
	10th Avn Bde	

AFFOR

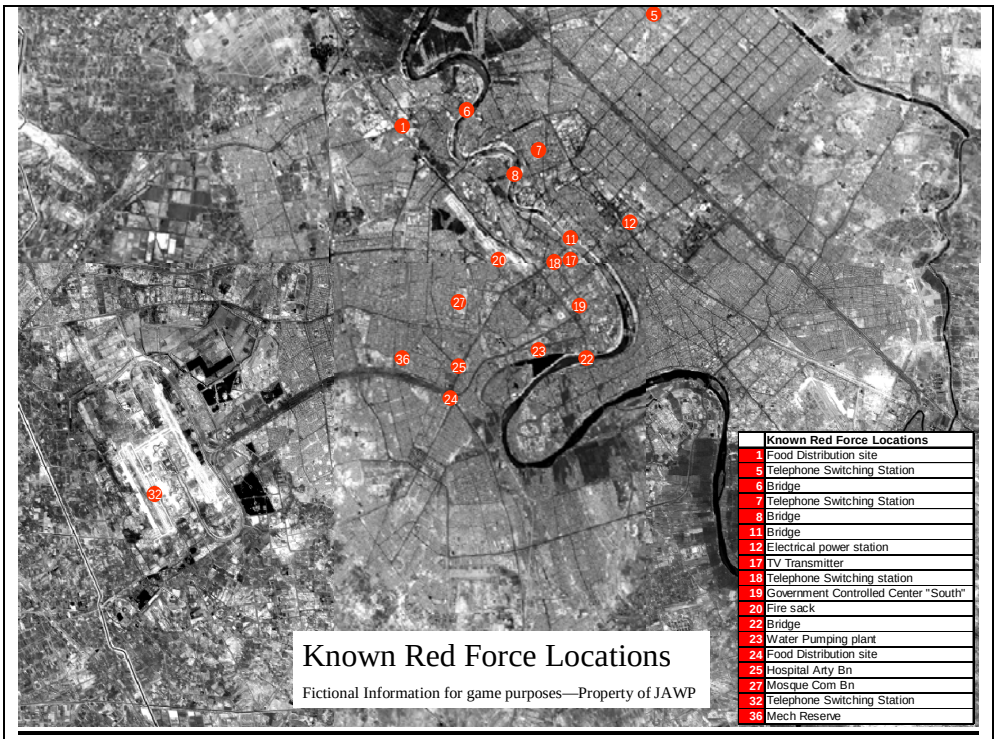
Theater assets available for planning

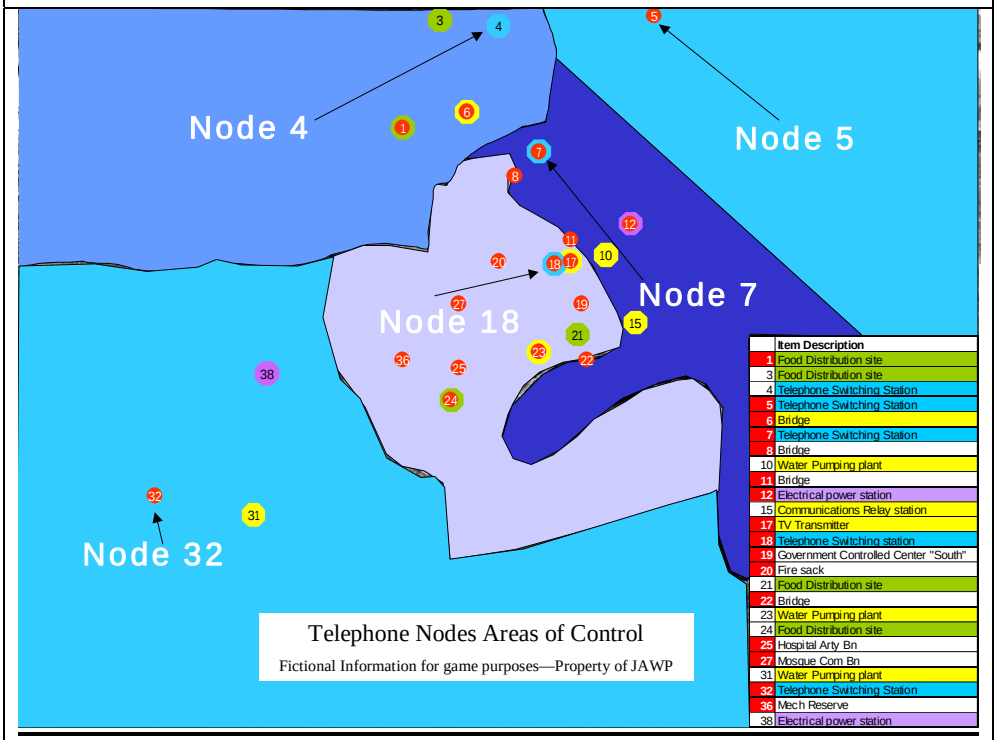
3rd AEF(s)
1125th UAV Sqdn
Theater ISR (list)

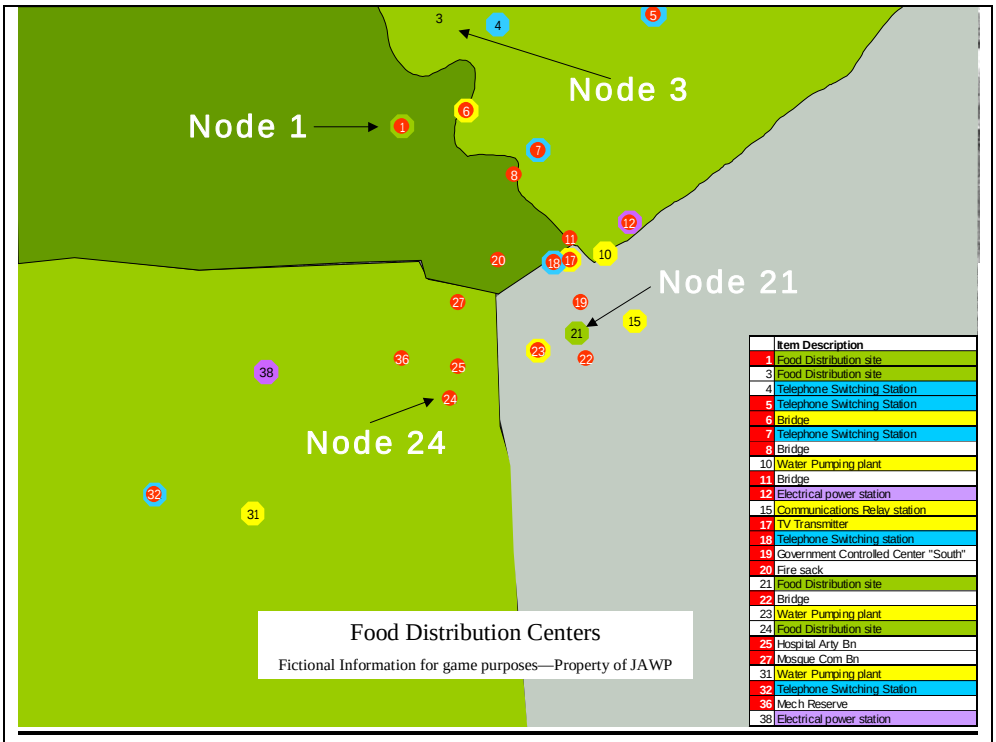
SOF

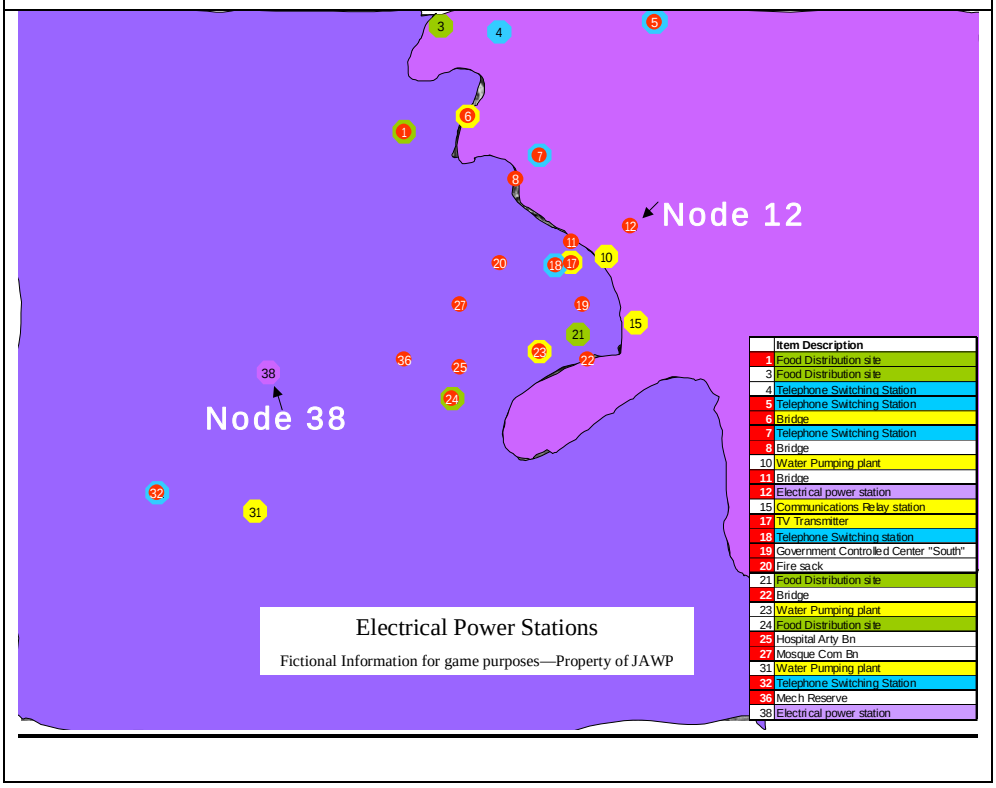
1st and 2nd Bn / 6th SF Group
7th Bn, 1st Ranger Regt
1st Bn, 1st PSOPS Group
125th CA Bn

Target List

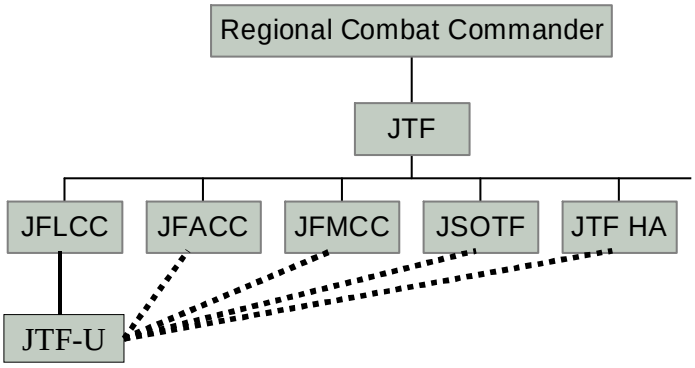

Known Red Force Locations
Fictional Information for game purposes—Property of JAWP
Known Red Force Locations
1 Food Distribution site
5 Telephone Switching Station
6 Bridge
7 Telephone Switching Station
8 Bridge
11 Bridge
12 Electrical power station
17 TV Transmitter
18 Telephone Switching station
19 Government Controlled Center "South"
20 Fire sack
22 Bridge
23 Water Pumping plant
24 Food Distribution site
25 Hospital Arty Bn
27 Mosque Com Bn
32 Telephone Switching Station
36 Mech Reserve


Node 4
Node 5
Node 7
Node 18
Node 32
Telephone Nodes Areas of Control
Fictional Information for game purposes—Property of JAWP
Item Description
1 Food Distribution site
3 Food Distribution site
4 Telephone Switching Station
5 Telephone Switching Station
6 Bridge
7 Telephone Switching Station
8 Bridge
10 Water Pumping plant
11 Bridge
12 Electrical power station
15 Communications Relay station
17 TV Transmitter
18 Telephone Switching station
19 Government Controlled Center "South"
20 Fire sack
21 Food Distribution site
22 Bridge
23 Water Pumping plant
24 Food Distribution site
25 Hospital Arty Bn
27 Mosque Com Bn
31 Water Pumping plant
32 Telephone Switching Station
36 Mech Reserve
38 Electrical power station


Node 1
Node 3
Node 21
Node 24
Food Distribution Centers
Fictional Information for game purposes—Property of JAWP
Item Description
1 Food Distribution site
3 Food Distribution site
4 Telephone Switching Station
5 Telephone Switching Station
6 Bridge
7 Telephone Switching Station
8 Bridge
10 Water Pumping plant
11 Bridge
12 Electrical power station
15 Communications Relay station
17 TV Transmitter
18 Telephone Switching station
19 Government Controlled Center "South"
20 Fire sack
21 Food Distribution site
22 Bridge
23 Water Pumping plant
24 Food Distribution site
25 Hospital Arty Bn
27 Mosque Com Bn
31 Water Pumping plant
32 Telephone Switching Station
36 Mech Reserve
38 Electrical power station


Node 12
Node 38
Electrical Power Stations
Fictional Information for game purposes—Property of JAWP
Item Description
1 Food Distribution site
3 Food Distribution site
4 Telephone Switching Station
5 Telephone Switching Station
6 Bridge
7 Telephone Switching Station
8 Bridge
10 Water Pumping plant
11 Bridge
12 Electrical power station
15 Communications Relay station
17 TV Transmitter
18 Telephone Switching station
19 Government Controlled Center "South"
20 Fire sack
21 Food Distribution site
22 Bridge
23 Water Pumping plant
24 Food Distribution site
25 Hospital Arty Bn
27 Mosque Com Bn
31 Water Pumping plant
32 Telephone Switching Station
36 Mech Reserve
38 Electrical power station

Command and Control



Appendix F.
DART Briefing on Insights at the End of War Game II

DART PERSPECTIVES

JAWP URBAN WAR GAME

Gary Anderson and John Sandoz

DART

COMMENTS ON CONCEPTS

- Both segment and capture and nodal capture and isolation will work with 2003 capabilities; neither, as a stand alone, represents a revolutionary approach given today's capabilities
- High casualties among blue and non-combatants in reducing urban strong points will not be reduced by either concept alone
- Non-lethal incapacitating agents could help greatly

DART

COMMENTS (CONT.)

- Precision Strike does not appear to be valid as a stand alone urban concept
- Red would not surrender based on a strike only option
- Very susceptible to Red deception
- Much merit as a supporting concept
- To realize its full potential, much better ISR is needed

COMMENTS (CONT)

- Technologies and other capabilities that would improve precision strike
  - See through wall and ceilings technologies that would detect large groups of armed individuals and heavy weapons
  - Improved HUMINT regarding what nodes enemy holds dear and deception plans
  - Improved urban IPB on key utility nodes, subways sewers etc.
  - Nano tech based cloud that would seal inadvertent hazardous material leaks

COMMENTS (Cont.)

- Blue urban JTF needs a mechanism for potential civilian mass casualty mitigation
- Diverting combat power to mitigate is dangerous
- Ignoring the situation is not an option
- Best option is likely a national asset “plug and play” capability that can be assigned to a JTF if urban ops are anticipated

DART

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COMMENTS

- We might want to consider making nodal sampling part of the battle space shaping concept
- Raids and observation missions on selected representative nodes
- If red is heavily defending a certain type of node, chances are, he is doing the same with the rest of the nodes of that kind; same holds with the deliberate placing of civilian shields

DART

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OBSERVATIONS ON NON-LETHALS

- Have to be viewed as a combined arms asset not as merely an MP tool
- Biggest challenge is in weapons acceptability and policy rather than in technology; any NLW ACTD should include policy and weapons acceptability
- Any use of NLW should be coordinated with info ops campaign; enemy and human rights groups *will* portray them in an unfavorable light. This must be anticipated

SUGGESTED CONCEPT IMPROVEMENTS

- NATIONAL ASSET"Plug and Play" packages for JTF's assigned urban missions
  - Mass Casualty Consequence Management package
  - Non-Lethal Weapons package
  - Kit Carson Scout MTT package
  - JTF Counter-sniper capability package

WMD/MASS CASUALTY MITIGATION PACKAGE

- Built around USMC CBIRF
- Mobile hospital capability
- Water purification (ROWPU) capability
- Contract language interpreter skills
- LNO team with skills in dealing with NGOs, PVOs and IOs

DART

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NON LETHAL WEAPONS PACKAGE

- Incapacitating Unit (nodal take down)
- Barrier Unit (crowd control)
- Medical unit for mitigation of those suffering from worst case effects
- MP unit to disarm and detain incapacitated combatants
- PSYOPS unit to warn crowds and reassure casualties (reinforced by language proficient contract personnel)
- PAO unit to reinforce JTF IO effort and educate the public

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KIT CARSON SCOUT MTT PACKAGE

- Built around special forces A Team reinforced with language proficient contractors
- Quickly train “turned” enemy POWs and defectors for skills useful to US forces and send them to augment tactical US units after indoctrination
- Provide cadre for post conflict urban security force to enable transition

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JTF COUNTER-SNIPER PACKAGE

- Use to flood selected targeted nodes with counter-sniper capabilities
- Mobile counter-fire system
- Dazzling lasers to temporarily blind snipers in a building where their exact location cannot be determined without killing the rest of the inhabitants of the building until Blue counter-fire assets can be brought to bear
- Friendly hunter-killer counter-sniper teams

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SUGGESTED FURTHER EFFORTS

- **“Battle for Arlington” experiment. scenario uses Arlington Va. As foreign urban area in scenario; Use local fire, police, phone and utility personnel as red team**
- **Classified replay of JAWP Urban WG II using NGIC data to examine nodes and provide red lay down**

DART

Appendix G.
DART Briefing on the Concepts

BLUE-RED EVALUATION OF JAWP URBAN CONCEPTS

Gary Anderson

Nodal Capture

- Advantages
  - Avoids block by block approach
  - Concentrates on key nodes
  - Rapid control of critical terrain

Nodal Capture

- Disadvantages
  - Identification of what enemy considers key may not line up with our evaluation
  - Lines of communication may be exposed
  - Danger of defeat in detail
  - Difficult to determine how well each node is defended with today's technology

DART

Nodal Capture and Expansion

- Advantages
  - Same as Nodal capture, except that it ensures greater area control than pure nodal capture

DART

Nodal Capture and Expansion

- Disadvantages
  - Logistically challenging
  - depends on better ISR than we have today

DART

5
DART (Miller) Nov 2002

Precision Strike

- Advantages
  - Least risk to friendly forces
  - Least chance of civilian casualties
  - Least need for logistics

DART

6
DART (Miller) Nov 2002

Precision Strike

- Disadvantages
  - Hard to determine battle damage with today's technology
  - Most subject to deception
  - No way to control civilian population

DART

Nodal Isolation

- Advantages
  - Same as precision strike except nodes are controlled not merely denied to enemy

DART

Nodal Isolation

- Disadvantages
  - Not possible with today's technology
  - Difficult to assess success
  - No assurance of population control

DART

Segment and Capture

- Advantages
  - Least technology dependent
  - Best chance of area control

DART

Segment and Capture

- Disadvantages
  - Least rapid
  - Highest possibility of casualties
  - Most need for logistics

Soft Spot Capture and Expansion

- Advantages
  - Most likely to exploits enemy weaknesses and mistakes
  - Good prospects for area control
  - Most prospect of suprise

Soft Spot Capture and Expansion

- Disadvantages
  - Difficult to determine soft spots with today's technology
  - Potential for defeat in detail
  - Logistically challenging

Most needed Technological Improvement

- Improved ISR (Robotics, see through walls and roof technology). Needed in all
- Non lethal incapacitating technology (needed in five of six)
- Improved non-helicopter delivered fires (needed in four of six)
- Improved logistics technology (needed in four of six
- Improved up-to-date knowledge of urban terrain and infrastructure Needed in all

Other Capabilities Required

- Plug and play JTF augmentation for mass casualty mitigation, counter sniper, and area control
- Better cultural intelligence
- Improved interagency coordination

DART

Conclusions

- They appear to be better used in combinations as techniques rather than stand alone concepts
- Precision strike and nodal isolation appear to be supporting tools rather than techniques
- More experimentation is needed assuming improved 2015-20 technology

DART

Appendix H.
War Game II
Team B Notes

TEAM B:

Day one: (Mission Analysis)

Nodal Capture as a defeat mechanism: **Not a defeat mechanism**
-Control critical nodes
-Psychological Debilitating

Advantage:

- Shock
- Resolution
- Control of Nodes

Disadvantage:

- Multi Nodes
- Increased force
- Increased risk
- Logistics
- Increased force protection
- Risk destruction of the node
- Defensive in nature

Nodal Capture and Expansion as a defeat mechanism: **Strong possibility!**
-Control Nodes and expand

Advantage:

- Island for logistics
- Base camp system
- Control key nodes
- Offensive in nature
- Plans to our advantage: as an offensive force by nature…

Disadvantage:

- Expansion problems
- Increased logistics
- Increased force protection
- Increased risk
- Large force requirement
- Overall sustainment issues
- Multi node plans
- Risk destruction of the node

Soft Point and Expansion as a defeat mechanism: Possible!
-Capture a soft point and expand
-Cohesion of forces and psychology involved

Advantage:

- Get into an undefended place
- Logistics base
- Psychological effects
- Surprise
- Force movement

Disadvantage:

- Key nodes left intact
- Future from desired point
- Bad soft point
- Multi node
- Sustainment
- Increased risk
- Force protection
- Takes longer for effects to develop

Nodal Isolation: **Not a defeat mechanism**
-Seals node
-Psychological effects-

Advantage:

- Minimum force on the ground
- Reduced logistics
- Minimal force protection

Disadvantage:

- Minimum force on the ground
- Hard to do
- Required increase Intel
- Increase risk of failure
- No control of recourses
- Increased collateral Damage
- Doesn't show political resolve

Precision Strike: Possible.
-Attack key capabilities
-Defeat forces: kenetic/non-kenetic

Advantage:

- Minimum forces on the ground
- Reduced logistics requirement
- Increased force protection
- Fits competing Objectives to end state

Disadvantage:

- Collateral damage
- Increased Intel
- Time oriented, the longer it goes the more it appears like attrition warfare
- 47 days of war have not provided a desired effect
  - Precision strike has some serious problems. Without a significant ONA/DIME analysis, which may never be totally achievable, relying on precision strike alone. EBO is not yet developed as a current force application
  - We only have a 50% picture on enemy forces and we have no idea what effect precision strike will have on non-combatants.

Segment and capture: We selected this one.
-Counter mobility
-Defeat forces

Advantage:

- Divide and conquer
- Defeat piecemeal
- Offensive in nature
- Allows mass if needed
- Segments significant logistics/MSR/and possible Red force massing towards the COG

Disadvantage:

- Force intensive if required.
- Increased needs for force protection
- Increased LOC's
- Increased collateral damage (maybe)
- Increased risk of losing nodes to sabotage
- Segment and capture is too narrowly defined!
- Divide the city in pieces. Ethnic, geographic boundaries, differences in military command and control.
- Use the other concepts to support with kinetic, and psychological & debilitating effects.
- Eliminate the C2 and apply rifts into the infrastructure.
- If done properly it will achieve the objectives… The devil is in the details…

- Do we go after his COG first, or segment around for final deathblow in the end.
    - Segment line 1: Terrain River/urban infrastructure/canals: Segment 1 (see map)
        - The river sticks out as the obvious first segment. And the one that makes the most sense (a person place or thing):
            - Advantages:
                - Separates 1.2M of the population
                - Is a great natural barrier for both defense and offensive operations?
                - We trap his forces on that side of the river: we ignore them; fight them, or they surrender.
                - We create a situation that allows supporting concepts to be implemented against those forces.
            - Disadvantages:
                - A lot of territory.
                - Segments within segments create increased command and control and coordinated fires.
                - This first segment is not a final deathblow.
            - What do we wish to achieve:
                - Use geographic and ethnic division to create a positive relations campaign to demonstrate immediate positive international opinion. This will be the opening step of Red leaderships erosion of power. This is in direct response to Reds desires to create a negative international opinion of Blues actions. Our first action is human and internationally acceptable.
            - How do we achieve this:
                - PSYOPS
                    - Leaflets
                    - Radio/TV Broadcasts
                    - Loudspeakers
                    - Local support (HUMINT shaped)
                - Power and Telephone Connect/Disconnect
                - HA established outside the city for displaced personnel and for the movement of sustainment into the city
                - Established CMOC: Civil/Military Operations Center
                - Food/water to East.
                - Facilitate Handoff to civilian authority

- How do we Segment:
  - Deny access to bridges
  - Control major intersections
  - Control/Isolate critical nodes
    - Control access/deny/destroy/disrupt/capture
      - CMOC will determine the key bridges
- Force Allocation: Segment line 1 US Marines
  - 9th Marines, 12th MAW, and 5th FSSG conduct operations East of the Sacred River in order to segment Red logistics, forces, and command and control of to reduce his capability to mass. Use the ethnic division and unrest between the Red minority (Sunni) and the majority East of the River (Shia) to create a positive international opinion and start to erode the power of the Red leadership.
  - Node 3 (food distribution site) Soft point and capture. No known force allocated at this position, however, if so – we need to be prepared to capture the node.
    - Ensures that people that need food and water are getting it, and ensures that the logistics for Red forces is cut off.
  - Node 4 (Phone switching station) Precision attack (soft kill with kinetic strike)
    - Eliminate the phone service for phase one with the intent of returning the service at a later date. This stops communications between the Red government and the Sh'ia in the East
  - Node 5 (Phone switching station) Nodal Capture with the intent of achieving the operational goal of not destroying infrastructure and restoring this capability as soon as possible. There is a Bn. on this objective. The value is to keep this node operational under Blue control
    - Effect is the same as Node 4.
  - Node 7 (Phone switching station) Precision strikes with soft kill with non-kinetic strike. Take this out.

        - Effect is the same as Node 4.
    - Node 12 (power station for East of the River) Precision strikes with a non-kinetic strike.
        - Take away the Red government's infrastructure on the East side – to provide our forces operating at night an advantage.
    - Node 15 (Communications Relay Station) Precision strikes with a non-kinetic strike
    - Node 10 (water pumping plant) Water production will be an NGO/HA problem. Distribution to the city will be coordinated
    - One Marine Regiment attacks from the North to nodal capture 5 and Soft point and capture 3.
        - The effect is to control infrastructure and significantly impact the success of segmenting the ethnic regions of the Red capital
        - The ability to use this infrastructure is critical.
    - One Marine Regiment attacks from the South East to capture the airfield to the South East of Red capital. This airfield increases our mobility and ability to maneuver – to include a rapid build-up.
    - One Marine Regiment is in reserve, FSSG and MAW in DS. Army 100th MP and 125 CA Bn.s in DS.
- Segment line 2 & 3: Red Force/LOC's: Segment 2, 3 (see map)
    - The major road infrastructure in Baghdad works to the advantage of both Red and Blue, however, these lines are not aligned 100% with the segment lines:
        - Advantages:
            - Segments logistics movement from the North and all movement on major MSR's from the North East
            - Could possibly segment forces from reinforcing from the West to the Central District.
            - Combined with segmentation of the East, it will become quite clear to the Red leadership that his power base is starting to erode.

- Disadvantages:
    - Segmenting in a highly urban region will be difficult.
    - Large area, difficult to control, highly concentrated with blue forces (both heavy and light), or significant remote fires or combination of various other approaches.
- What do we wish to achieve:
    - Isolate through segmentation the SRG and the senior leadership.
    - Cut off logistics from food distribution sites, and control MSR's used for massing forces.
    - Create a condition of imminent failure of the Red forces.
- How do we achieve this:
    - Segment 2 will use precision strike
    - Segment 3 will use precision strike and remote fires
- Force Allocation: for segment line 2 and 3 US Army
    - Node 32 (airfield) Nodal Capture and expansion. A great place for an immediate and rapid buildup of follow-on forces or logistics.
        - A psychological and debilitating effect on Red government
    - Node 1 (Food distribution site) By pass
    - Enemy position 25, Arty unit at hospital will be attacked. Needs JTF-U approval Hard kill
        - Precision strike.
    - Node 27, Comm unit at Mosque taken out with non-kinetic weapon.
        - Eliminate Red HF/VHF comms between operating forces etc. and exploit for intel
    - Node 18
    - Node 19, Government controlled Center, Precision strike hard kill.
        - Another psychological and debilitating effect on Red forces.
    - Army AAST DIV attacks north east to capture the major airfield. One BDE attacks and one in Reserve.
    - 8th Infantry Div attacks from the West to attack fortified positions West of the City

(unknown enemy on the positions) Attack up to segment line 2 if needed.
- 15th INF Div positions South of the city to Fix forces in the Central District.
- 7th Bn. Ranger Bn. in reserve
- Establish segment line 2 with remote fires, attack aviation, and precision strike. Create a psychological debilitating effect upon the Red force leader.

- Phase 1:
  - IO campaign East of Segment line 1 and West of segment line 2.
  - Conducted simultaneously.
  - Estimated time to achieve this is 10 days.

COG?
-We believe it is the SRG and leadership.

How do they control?
FEAR:
-SRG
-Paramilitary
-Special Police/Secret Police
METHODS:
-Control resources
-Use communications assets
-Fear/intimidation

Specified Tasks:

1. Destroy government (regime change)
2. Destroy WMD

Essential Tasks:
1. IDP housing/subsistence
2. Food/water/supplies to city residence
3. Transition to peace time government friendly to US
4. Humanitarian assistance
5. Safe environment for CA
6. Positive CNN effect

Restraints:
1. Can't destroy city
2. Public opinion

Constraints:

Assumptions:

1. City isolated from theater
2. Sympathizers provide info to Blue force
3. Civilians won't or can't leave
4. NGO's are in country and functioning at the desired level. To include complete HA/displaced persons camps

Our priority of infrastructure: Defined by us, and CMOC

1. Water
2. Electric
3. Food distribution
4. Bridges
5. TV/Radio
6. Communications

Requirements: CCIR/RFI/EEFI

1. Tribal layout of city
2. JWAC analysis

Our Concept with respect to USECT from the urban roadmap.

UNDERSTAND:

- What elements were critical while developing your plan:
- What knowledge was lacking:
- How did your understanding influence your decisions:

SHAPE:

- What elements were critical to shape the battlefield:
- How did the application of the methods shape the battlefield:
- What else was needed to shape the battlespace:

ENGAGE:

- What made your selected targets important:
- What concepts did you choose and why:
- What concepts did you not choose and why:
- What were the expected results:
- What was the expected enemy reaction:
- What was your counter-action:
- What was the defeat mechanism you envisioned:

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14. ABSTRACT

JAWP conducted four war games that explored the utility of six new urban operational concepts. The purpose of these war games was to better understand the utility, strengths, and weaknesses of each course of action, and to learn more about how they interrelate. The approach generally involved giving Blue Teams varying degrees of freedom to apply the operational concepts within urban scenarios, while Red Teams countered with their own courses of action. The Blue players merged the different operational concepts into one larger concept, with variations depending on the scenario. The Blue players also displayed patterns in the types of urban capabilities they needed in such areas as intelligence, surveillance, reconnaissance; electronic warfare and information operations; precision strike; non-lethal weapons; urban logistics; civilian support; and coordination. Researchers investigating technological solutions for urban operations should find value in the capability-demand patterns of the Blue players, and what the Red players thought Blue needed.

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Concepts; electronic warfare; information operations; intelligence, surveillance, and reconnaissance (ISR); non-lethal weapons; operational concepts; precision strike; Red teaming; urban combat operations; war games.

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